DOCUMENT RESUME

ED 055 246 52 VT 014 109

TITLE Coordination of Supportive Programs for Vocational Education Students in Metropolitan Areas. Institute IV, Final Report.

INSTITUTION Temple Univ., Philadelphia, Pa. Div. of Vocational Education.

SPONS AGENCY Office of Education (DHEW), Washington, D.C.o

BUREAU NO BR-9-0535

PUB DATE Apr 70

GRANT OEG-0-9-480535-4436(725)

NOTE 65p.; Part of Short Term Institutes for In-Service Training of Professional Persons Responsible for Vocational-Technical Education in Eastern Metropolitan Areas (Washington, D.C., April 12-17, 1970)

EDRS PRICE MF-$0.65 HC-$3.29

DESCRIPTORS *Ancillary Services; Articulation (Program); *Conference Reports; Educational Administration; *Educational Coordination; Educational Needs; Educational Objectives; Educational Planning; Followup Studies; Information Systems; *Metropolitan Areas; Systems Approach; *Vocational Education

ABSTRACT

This conference emphasized the consideration of the total structure of supportive services for students, explored the relationships and the conflicts between present structures, and considered the systems approach to the creation and implementation of a master plan for supportive services. Participants from the 26 cities and 29 alternate cities east of the Mississippi which have been singled out as targets for special attention were invited to share in the 4-day conference. The philosophical discussions led to the conclusion that there may be glaring inadequacies in the system. Also, it was concluded that the body needed to investigate new possibilities for coordination of supportive services, that they needed to communicate more clearly with other systems seeking to serve students, and that they could share the institute findings with others in their area by means of seminars, sharing reports, or setting up discussions between services at the local level. (GEB)

ED055246

FINAL REPORT
INSTITUTE NUMBER IV

Project Number 9-0535
Grant No. OEG-0-9-480535-4436-(725)

Coordination of Supportive Programs for Vocational Education Students in Metropolitan Areas

VOLUME IV

Part of
Short Term Institutes for In-Service Training
of Professional Persons Responsible for Vocational-Technical Education
in Eastern Metropolitan Areas

Institute Director
Dr. Cleveland L. Dennard, *President*
Washington Technical Institute
Washington, D.C.

Co-Director
Robert L. McKee, *Program Director*
Washington AMIDS
Washington Technical Institute

Director of Institutes .... Dr. C. Thomas Olivo, *Professor*
Division of Vocational Education
College of Education, Temple University
Co-Director ..... Dr. Albert E. Jochen, *Consultant*

Washington, D.C.—April 12-17, 1970

Sponsored and Coordinated by the Division of Vocational Education,
College of Education, Temple University, Philadelphia, Pennsylvania

U.S. Department of Health, Education, and Welfare

VT014109

ED055246

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

FINAL REPORT
INSTITUTE NUMBER IV

Project Number 9-0535
Grant No. OEG-0-9-480535-4436-(725)

Coordination of Supportive Programs for Vocational Education Students in Metropolitan Areas

VOLUME IV

Part of
Short Term Institutes for In-Service Training
of Professional Persons Responsible for Vocational-Technical Education
in Eastern Metropolitan Areas

Institute Director
Dr. Cleveland L. Dennard, *President*
Washington Technical Institute
Washington, D.C.

Co-Director
Robert L. McKee, *Program Director*
Washington AMIDS
Washington Technical Institute

Director of Institutes .... Dr. C. Thomas Olivo, *Professor*
Division of Vocational Education
College of Education, Temple University
Co-Director ..... Dr. Albert E. Jochen, *Consultant*

Washington, D.C.—April 12-17, 1970

Sponsored and Coordinated by the Division of Vocational Education,
College of Education, Temple University, Philadelphia, Pennsylvania

U.S. Department of Health, Education, and Welfare

The research reported herein was performed pursuant to a grant with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

TABLE OF CONTENTS

I. Introduction 1
II. Methods and Procedures 2
III. Evaluation of Institute 2
IV. Results, Conclusions, and Recommendations 2
Presentations
Backstopping Career Education 5
Marvin Feldman
Admissions/Outreach 8
Horace Holmes
PERT, Program Evaluation and Review Techniques 12
Robert McKee
Establishing Educational Objectives 16
Kenneth Hoyt
Relationships of all Instructional Student Services 20
Martin Hamburger
Innovations and Old Notions 24
Theodore Cote
Information Systems 27
Cleveland Dennard
Supportive Services, WTI 31
Anthony Campbell
Referral Services 36
Lucille Johnson
Job Bank 38
Maurice Hill
Strategies for Follow-up of Vocational Education Students 39
Mary L. Ellis
Participant Reaction Sessions 41
Summary of Evaluations as Completed by the Conference Participants 48
Immediate Post-Conference Evaluation 48
Six Months' Evaluation 51
Supplemental Material
Appendix A, WTI Planning Chart 54
Appendix B, Conference Agenda 55
Appendix C, Planning Model for Student Services 56
Appendix D, Interagency Services for Center 57
Appendix E, Urban Education Center Model 58
Appendix F, List of Participants 59
Appendix G, PERT Bibliography 62

Title VI of the Civil Rights Act of 1964 states that, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program of activity receiving Federal financial assistance." Therefore, the Education Professions Development program, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

I. INTRODUCTION

The need for a total system of supportive services for students in the urban metropolitan areas of the nation is critical. Often, however, only pieces of this system have existed with interruptions or short-circuits in the total help that an urban student may need to enter education, stay with it, achieve his present educational goal, successfully secure and hold a job, and possibly return for more education on a continuing basis.

The purpose of the conference was to give opportunity for counselors, teachers, administrators, and other vocational education people to consider the total structure of supportive services for students, to explore the relationships and the conflicts between present structures and to take a systems approach to the creation and implementation of a master plan for supportive services into which each component can logically and beneficially fit.

From the target area cities there were two representatives of state offices of education; four state directors of vocational education; one person from employment services; nine from business/industry/labor; ten administrative or supervisory adult and general education personnel; twelve supervisors of vocational education; two from colleges and universities, four university teachers; three MDT personnel; two from research and planning; and three from U.S.O.E.

From the alternate target area cities there was one supervisor of adult and general education; three vocational education supervisors; and two personnel and guidance people. From the target states there were five vocational education supervisors; one state office of education person; seven from colleges and universities; one MDT person; and one person from personnel and guidance. There were eighty-eight persons attending the conference.

The conference was planned to be responsive to expressed needs of the participants. Program changes were made in the conference flow as the sessions progressed, to accommodate to those needs. As part of the printed program, a skeleton planning model of student services was furnished to each of the participants at the beginning of the conference. There was opportunity for participant input several times throughout the conference. This input, plus the exposition of topics by the principal speakers, and the contributions made by panelists and group leaders, led to the expansion of this skeleton model into a more complete form.

II. METHODS AND PROCEDURES

The Conference on Coordination of Supportive Programs for Vocational Education Students in Metropolitan Areas was held in Building 4, Washington Technical Institute, Washington, D.C. WTI was the contracting agency for the conference in cooperation with Temple University under U.S. Office of Education Grant No. 9-0535. The Institute Director was Dr. Cleveland L. Dennard, president of WTI. The Assistant Director was Robert L. McKee, of the WTI staff.

Participants from the twenty-six cities and twenty-nine alternate cities east of the Mississippi which have been singled out as targets for special attention were invited to share in this four-day conference, to analyze the role and function of each area of the total supportive services structure, and to develop and evaluate ways to improve and implement the components of the system so that there might be workable and practical results in the lives of those the system serves.

Nationally known speakers highlighted the conference, complemented by group leaders from Washington Technical Institute, as well as other WTI staff members. Effort was made to achieve involvement of all of the participants in various ways. Student ideas and suggestions were also sought, and student reactions were part of the conference structure.

Ideas were freely shared and discussed. Informal group interaction extended beyond the formal framework of the day's activities as the groups endeavored to consider some new approaches and some attitudinal and institutional changes which might be indicated to better coordinate the supportive services necessary to reinforce the education of urban vocational education students.

Concern was expressed that some of the existing services are poorly used or not used at all and that a better understanding was needed by everyone as to what services were needed, and how duplication of effort might be avoided while increasing the practical application of available facilities, agencies, services, and people.

Participants expressed real concern about some phases of their present system. It was discovered that in many cases participants did not really know what the other agencies and offices had to offer the student, or what the function and capability of various services were. It was also suggested by many that vocational educators needed to take another look at the kinds of help they were giving their students and the limitations of these kinds of helps. It was suggested that there were gaps in communication and in practical assistance which would give students a better handle on achieving some successes.

Participants were willing to look for solutions, willing to reassess some of their structures and traditions, willing to try to create closer cooperation and inter-relationships between schools and services. There was a sense of commitment to exploration of innovative possibilities, and an admission of the fact that there had too often been some tendency toward complacency on the part of vocational education teachers and administrators in an effort to protect an existing system from change.

The conference closed with agency visits and an evaluation session.

A combination of methods were used during the conference in order to maximize participant involvement and to share as much as possible of each person's particular body of knowledge with the entire group.

While there was a core of lectures by eminent experts in the field of vocational education and guidance, a great many of the sessions were planned to allow give-and-take between speaker and audience. In addition, student panels were used to give greater visibility to the need for incorporating real student needs and feelings into curriculums, administrative procedures, admissions policies, teaching methods, and institutional objectives.

A Supportive Services Model was given to participants at the beginning of the conference, printed in the program. During the week the different areas contained in this model were considered and amplified. Task force assignments included constructing more complete models and taking the student's point-of-view.

Informal dialogue was used to move the conference into involvement. Brainstorming sessions were conducted by staff and consultants. Small group sessions followed lectures for the purposes of practical application of ideas presented during the lectures. Video tape, audio tape, slides, and chartboard presentations were used.

III. EVALUATION OF INSTITUTE*

Evaluation Form I was not used in this conference because the very short lead time involved in planning did not allow for the form to be distributed and administered in the available time frame.

The conference participants were asked to give an informal evaluation of the experience immediately at the close of the conference. Our participants were very open in their comments, which we appreciated. Almost all felt that it was a good conference. Over half indicated they felt the speakers were one of the major conference strengths. Ninety percent felt speakers really knew their subjects. A great many participants made specific mention of the high quality of leadership, planning, and the variety of occupational responsibility of fellow participants. While one or two felt the material presented was familiar, 98% said they learned something new and most stated they appreciated the occupation mix of the group and the resulting exposure to many diverse but related problems, particularly those of people who are in other areas of work.

There were some who felt that the small groups needed more direction. Individuals made the suggestion that we use daytime hours for tours and visitations, scheduling classes in the evening; that we use more audiovisual devices for presentation; and that we prepare a package to be issued to the participants ahead of the conference.

Almost everyone indicated they would attend another such institute. Almost equally as many said they would recommend to their fellow workers that they attend such an institute.

The conference staff wishes to express their appreciation to the participants for their flexibility and stamina, for their good suggestions, and their good fellowship.

IV. RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

Objectives of the Institute

The objectives of Institute IV were to identify and define coordination of supportive services roles for program personnel in Vocational-Technical education, practical arts, and manpower oriented exemplary programs and projects.

It was determined, both from the pre-conference evaluation forms and from participant response in the conference itself that there was an alarming lack of understanding of the nature and the availability of supportive services among the various members of the conference. It appeared quite clear that there are many existing definitions of supportive services and, in many cases, a rather superficial understanding of the ways in which these services could and should be used.

In addition, different state, county, or local systems application made it difficult to draw any clear and clean lines as to how any one service might be most effectively utilized.

Despite these differences in basic structures as well as differences in basic approaches, it was established that supportive services systems must be more fully understood, appreciated, and employed if the vocational-technical student in metropolitan areas is to receive the full benefit of the professional help which is available to him.

It was established also that the student might very possibly feel that there was no use in asking for any help from the system. This attitude requires of the teachers and counselors a special degree of sensitivity in order that they may accurately assess the need of such a student and make proper referral for the student's best interest.

Participant Contributions

Having established the identity and role of the supportive services systems, participants in the conference set about exploring ways in which each of them could plug in those needed functions which did not now exist in their particular areas. A variety of ways to create a climate for change were suggested and discussed by the participants in panel and small discussion groups. Participants shared many good and stimulating ideas with each other as to how this might be done. These are recorded in detail in the section on Participant Reaction.

There was also vigorous conversation regarding the necessity for paying stricter attention to finding out what *was* available at the local level. Lack of funds was mentioned several times as a stumbling block to better client services. However, the

*See complete Evaluation Summaries, page 48.

biggest single deterrent to proper use of supportive services seemed to be the lack of complete knowledge on the part of those charged with the responsibility for making referrals or disposition of a situation.

Attainment of Objectives

It was felt that the conference did attain the objectives set forth for it by its planners and opened new avenues of thought and action to conference participants, particularly in the areas of coordination of services. Planning models and interagency cooperative models were developed by the participants and are included with the supplementary materials in this report.

Conclusions

It was concluded by the body that they needed to investigate new possibilities for coordination of supportive services in their own areas; that they needed to communicate more clearly with other systems seeking to serve the student; and that they could share the institute findings with others in their area by means of seminars, sharing reports, or setting up discussions and dialogue and then implementing cooperation between services at the local level.

The discussion of divergent philosophies led to the conclusion that there may, in some cases, be glaring inadequacies in the system. However, it is also true that those opportunities which exist are not being publicized or used by vocational educators to the fullest extent, and that the students are obviously unaware of these avenues of aid. It does not seem to be the student's responsibility to refer himself to the proper helping agency. That function seems more properly to rest with the teacher or administrator of his program.

Recommendations

The recommendations of the participants themselves are detailed in the introduction to the Participant Reaction Sessions, on page 41. These included relocating some services; establishing outreach and community involvement; establishing dialogue within departments responsible for referral; cataloging available services; analysis of needed services; strengthening interpersonal relationships with other section personnel and other agency personnel; using planning models; creating a student-to-student tutorial and guidance force; having workshops for vocational and academic staff together; sensitizing teachers and other personnel; and getting better agency coordination.

Presentations

by Staff and Consultants

BACKSTOPPING CAREER EDUCATION

Dr. Marvin Feldman
Assistant Director, Office of Program Development
Office of Economic Opportunity

The first step toward understanding what career education in two-year technical colleges really means is to be clear about what it isn't. It isn't either a watered-down university course or a repeat of high school, but something unique in itself, geated to the special problems and capacities of a special group of people.

You will be hearing more about what these people are like in a discussion later this morning. I will say only that it may be useful to think of them as having this in common—they are all in one way or another disadvantaged. It may be lack of money, or lack of verbal skills, or an execrable background that does not motivate the young in academic directions. Whatever the nature of the individual case, the point is that you who want to plan ways and means of backstopping career education for these students must work in a framework of expectations quite different from those you would have in connection with either a high school or a liberal arts college.

What you do for these students must be very much attuned to the here and now. In most cases, there will be no long vista of successful preparation to build on; the more likely background is a succession of failures. In most cases, too, there will be relatively little likelihood of a long academic future. What is to be accomplished had best be done quickly.

The life experiences of most of the students served by career education have not been the kind to make distant horizons mean much. Most of them won't buy deferred gratification—they know too much about defeat and too little about hope for that.

These are your parameters. It is not really surprising, in terms of them, that community college occupational programs, despite the many notable exceptions, turn up so many dismal statistics. I won't remind you of the drop-out rate which has prompted some people to describe the community college admissions office as a revolving door.

Two-year colleges, of course, have been growing at a rate that subjects them to a whole range of boom-town traumas. They have had to make do with what they could find, and this goes for students, instructional personnel, and teaching materials.

Same old story

It has meant, all too often, that young people in an occupationally oriented program in a two-year college have been confronted by the same old textbooks and teaching methods they had in high school—books and methods already proven inadequate for their needs. Where they have been confronted with university textbooks, or rewrites of university textbooks, it has been more of the same—disaster on a different level.

You, in education, are not to blame. Until now, there has been no market for anything very different from traditional high school and college curriculum. Now, this young giant, the two-year college and technical institute, is by all odds the biggest new thing in American education. By the end of the next decade it may be, in many respects, the biggest thing in American education, with no qualifying adjectives.

We are talking about 2.5 million people even now. There is really no predicting how high the figure will be when career education hits a stride and starts reaching out to the functional illiterates already employed as well as to the reservoirs of inadequately prepared workers in many age groups and situations.

What do all these people need in the way of instructional materials and teaching methods? We certainly don't know all the answers yet but we are beginning to see the outlines of some of them. Perhaps more important, we are beginning to take steps toward finding the answers we don't know. It has been one of the great ironies of our time that education, the growth industry built around knowledge, should have done so much less than other growth industries to make use of the techniques of knowledge-gathering in running its own affairs. Whereas other industries allot a reasonable percent of their

resources for research, education has just begun exploring the fundamentals of how teaching and learning takes place and finding out what kinds of teaching materials work best.

A new trend

There is a new trend, however. The Administration is determined "to develop a nationwide strategy for maintaining a continuing process of improvement and relevance in American education." This will be done in terms of expanded Federal support.

There is more in the new trend than government activity, however. Not only are we getting past the idea that the greatest possible teaching aid is a textbook written by a professor; we are also getting past the idea that the learned professions afford only the best, or the best place to look for answers in education.

We are beginning to discover how much there is to be learned about communication from the mass media, for example. Sesame Street, the educational TV program aimed at pre-school schildren, is a case in point. This is a program deliberately developed in an effort to make use of techniques derived from the success formulas of TV commercials.

People have regarded TV as a great potential teaching aid for a long time but programs like Sesame Street represent only the beginnings of hard knowledge about when, how, why, and to whom, TV teaches anything. It is interesting how many of the ideas once held about the effects of TV on people's thinking have not been borne out by actual events.

Take speech patterns, for example. When television first became a mass phenomenon, it was said that the neutral accent, or non-accent if you will, of the typical TV personality would pervade the whole population. Class, ethnic, and regional and beautiful speech patterns would be swallowed up in a dull, homogenized American language.

We all know it didn't happen that way. Television is perhaps even more important in the lives of poor and minority group people than it is to the middle class but it doesn't seem to have changed speech. In fact, once the middle class began discovering the poor a few years back, we found that communication in our black ghettos has evolved into something so different from TV-actor English that some analysts feel it is a separate language entirely, beginning to be used by the majority.

Clearly, while TV affects its audiences it doesn't always do so in predictable ways. The producers of Sesame Street have gone beyond the educated guessing of the past to try to find out for sure how TV gets to the viewer. Before the program was introduced, there were elaborate testings of groups of children on their responsiveness to different kinds of stimuli from the TV screen—measurements of attention span, and checks on what information was and was not absorbed. Then the program was put together in terms of the findings.

Testing continues now that Sesame Street is actually appearing. There are many surprises. The researchers were not prepared for the degree of selectivity there seems to be in what viewers—small children, at any rate—take in from what they see, and in the kind of connections they make between what they see and what they already know. The big news is that we are only beginning to scratch the surface of what there is to be learned about television as an educational instrument.

The same is true of other promising educational devices. There is a great need for research to accumulate real evidence about what works and what doesn't. As you are well aware, educational gadgetry has piled up much faster in recent years than educational achievements. There are teaching machines in storerooms in schools all over the country, waiting for research to show how to use them in line with the real dynamics of the learning process.

The interdisciplinary approach

Meanwhile, back in the universities, the most promising research activities seem to be those that call for interdisciplinary approaches. Not only are we looking to industry and the mass media for clues about effective teaching; within the academic world, we are going beyond the field of professional education to psychology, linguistics, cultural anthropology, and the physical sciences.

The techniques of systems analysis are in the picture, too. We are learning to break down the components of a skill or a concept into manageable units and to rearrange them in a sequence that facilitates absorption.

Perhaps the most important problem for you is tied in with the continuing effort to escape from the limitations of an educational tradition too heavily weighted toward verbal understanding. Psychologists are increasingly aware that differences in learning style are not, as past generations of teachers and pupils tended to believe, necessarily the same thing as differences in intelligence, or a necessary disqualification for the nonverbal.

Students of the learning process are finding that nonverbal approaches to information and skills can release unsuspected reservoirs of ability in young people once thought dull and incapable. For some, audiovisual devices do it. For others, techniques stimulating quite different kinds of perception and response are necessary. Learning by doing—approaching the abstract, insofar as it has to be approached at all, through the tangible, kinetic activities—is fruitful for many of the students we are concerned with here.

Community college most appropriate

For all such pioneer efforts, the community college is a particularly appropriate institution. Because of the necessary time limits placed on its involvement with students, it can try many short-term projects and learn from a wider range of results more quickly obtained than would be possible in a four-year college.

The unique crossroads position of the community college with its network of ties with industry, with the public school system, with universities, and with community institutions, formal and informal, offers its own riches of opportunity. Business and industry, of necessity, look on the labor supply as a factor in the economic equation determining their

activities. They can be highly creative in working out training procedures with relevance to education in general as well as to production efficiency in a given situation.

The importance of community college access to the ethnic subcultures cannot be overestimated. Blacks, as we all know, are a significant part of the community college clientele. If the community college has their needs and problems to deal with, it has at the same time the bonus of a natural tie with educational experiments going on in the black community.

We are a little more sophisticated now about questions of cultural appropriateness in educational materials than we were in the days when schools tried to teach poor black children to read by introducing them to the antiseptic suburban world of Dick and Jane. We are even a little more sophisticated than we were when we offered these black children a kind of Amos and Andy version of Dick and Jane and thought we had corrected the earlier mistakes. But the problem is far from solved.

Probably the most hopeful source of ideas on the subject is the black community, and particularly the poor black community where so many small-scale grass roots—or perhaps I should say cement sidewalk—experiments in education are going on. It is a trial-and-error business, with as high a proportion of nonsuccess in it as is to be expected from any striking out into the unknown. But, if we are to cross the cultural divide that obstructs the educational effort, this is a good place to look for guidelines.

The morale factor

Not the least of the contributions of black neighborhood educational projects is the reminder they offer of the importance of morale in learning. Pride, self-confidence, Black Power—whatever you want to call it, it is a necessary ingredient of the learning complex. It points the way to one characteristic that should be built into all educational materials designed for use in occupationally oriented programs—that they provide for quick successes.

This becomes possible with the rearrangement of curriculum materials in sufficiently small units so that mastery, established by testing, can be experienced over and over again until there is a structure of self-confidence on which to base further effort and achievement.

The importance of the morale factor also suggests the usefulness of making instructional materials in community college career education noticeably different from those in use in other parts of the educational system. It is not merely that the old-fashioned textbook full of abstractions did not work for most of these students, but that its failure has symbolic as well as literal meaning for them. They are going to mistrust anything that looks like it—to associate it with failure and the presumption of their own incompetence.

One more reason why instructional materials for occupationally oriented programs should emphasize their difference from traditional ones has to do with the morale factor on the institutional level. It is part of your investment in the future of career education in two-year colleges to help their prestige.

Two-year colleges have special identity

Two-year colleges, for all the impetus of growth they enjoy, are handicapped in the prestige area. At best too many people look on them as a consolation prize for the unfit; a second-rate refuge for second-rate people; a university that didn't make it. Since coming East a few years ago, I have become very much aware of the Eastern attitude.

If the two-year college is to do its job, which is entirely different from that of other educational institutions, it must realize its very separate identity. Distinctiveness in its educational materials can help to make the point.

This is not to say that career education represents a cutoff from the academic mainstream. Far from it. Precisely the genius of the occupationally oriented program in a two-year college should be its ability to keep a foot in both camps.

The kind of education you are called upon to produce must simply reverse the old order of business in vocational education. The old way was to teach procedures through principles, leading the student from physics and geometry to the machine. The new way is to introduce the theory through the physical realities of technology in action.

This inductive approach to the academic disciplines for primarily nonverbal students may open up unexpected possibilities of formal higher education for many of them. This is an important part of the new concept of the community college role—that for all the pragmatism and practicality of the way it prepares people for places in the labor force, it should leave the options open for a changeover to purely academic work if an individual's development should make it appropriate. Here again, the prestige interests of the community college are at issue. The old idea of vocational education as necessarily terminal has been a stigma in many people's minds—the mark of inferiority.

But career education need not be terminal. Properly understood, the skills for almost any occupation relate to the major academic disciplines. Properly taught, they produce understanding of at least the basics in the major areas of intellectual endeavor.

What, then, is before you? An extraordinary market—all the frustration and all the excitement of trying to do something difficult and new, and, I might add, infinitely worth doing.

There is no overstating the potentiality of community college career programs as a social force ready to move in the most sensitive areas of national life. Jobs, status, self-realization—everything that has been denied to the disadvantaged in the United States can be within their reach if the community college can be tooled up and organized for success. It is a large order but the magnitude of the challenge is the measure of the rewards.

ADMISSIONS/OUTREACH

Dr. Horace Holmes
Manpower Director
District of Columbia

It's a rare occasion when in any professional group a speaker outside of the profession is invited to speak. That's a new thing in American tradition. It begins to suggest the kind of atmosphere that we, from our perspective have been looking at and dealing with for some years now. It begins to tell us a little about the distance between where we are and where we need to go.

One could become very pessimistic about our chances of making it when you really start doing an eyeball look at the state of the art; the degree to which we really are able to deliver on our responsibilities. We have some real challenges still ahead of us. I'm not quite sure that we, in this country, are really able to 1) provide the resources, or 2) to have the know-how to do the kinds of jobs that the educational system must be able to do. You have been given some very interesting perspectives that I recommend to you for additional looks; when, in effect, you talked about certain aspects of education and its irrelevance to the day, as demonstrated in the discussions about the middle school years and the secondary years. I recommend that you keep these perspectives in mind. That was backed up by a discussion about the capability of the vocational institution to do the job that's required; and it was further brought out that we needed to examine linkages not only within the discipline of the school arena but between educational systems. But we have not mentioned the external forces that deal with the same population. So I recommend to you that as you look at your program linkage system here, that you turn to the planning model for student services as a take-off for the kinds of presentation items that I hope to share with you.

History of the problem

In order to get to Student Needs-Community Needs, I'd like to go back in time just a little bit—not very far in the course of history but to the beginning sixties. I would like to reflect with you about what the country looked like as it turned into the sixties. In the area of public responsibilities, each profession which was charged by the citizenry of the country to deliver public services to it had an assessment made by others of how well each of these disciplines had been doing its public charge. In every one of those instances the nation, in effect, said that public institutions had failed. And we've heard a lot of rationalization over the subsequent years as to why they had failed before, or why they hadn't done the whole job, or why they had only done a part of the job. But it remained that as we looked at the characteristics of our population, and as we made an assessment of the needs of our population, most public services had a long way to go. It didn't matter which door you went in, in human needs, you came to that same conclusion. If you were talking about health, you heard it. If you were talking about education, you heard it. If you talked about rehabilitation, you heard it. If you talked about public housing, you heard it. If you talked about the living environment, you heard it. Now I could run that laundry list for you on every area in which the public expects the public institutions to serve it well, and in every one of them we hadn't done too well. That, in effect, was the backdrop for a new dimension in the early sixties, starting with President Kennedy and followed up with President Johnson, and the mood of the Congress, saying "Let's have war on poverty." This was not in the financial sense of the word but a war on poverty in relation to this total set of human needs which haven't been fulfilled by those who have been given the charge and responsibility to fulfill them. Most of the public institutions said at that time, "We know best how to do our job. We don't need outsiders telling us how to do this job. Our problem has been then, that we have not had the financial resources to do the job. If you give us the funds we will be able to do that kind of job." Those who were doubting Thomases said, "You're rationalizing away the problem. This isn't just a case of financial resources. It's also a case of what you've done with the resources you've had, and how well you've delivered in relation to your missions and goals."

And so, in effect, some mavericks came along. Most of them—in fact I would presume 100% of them—came out of the disciplines which had failed. Some could say they were the malcontents, some could say they were the not-dry-behind-the-ear types, or they were the dreamers, or the philosophers, or whatever else you wanted to call them. They had rejected the social institutions which we are accustomed to dealing with and said, "We think that if you do this differently, this job will be improved upon." And so many of them became the cadre across this country, in the federal government, in local governments, and in private nonprofit organizations, which made a new beginning for this country by doing many of these jobs differently. Springing up, all over the country, we began to have demonstrations of what can be done differently than the way it had been done historically in the past. These exercises took place in several different kinds of ways.

Some of these people went to public institutions and said, "We've got some resources which you said you have needed; and we would like to join with you in working out some new methodology of doing this function." Perceptive heads said, "We welcome what you have. We're not defensive. Let's open up and join together, and try something."

Other administrators said, "You will fold up and wither away like the blooming rose. Go do your thing. We'll be here after you've finished." And so, competitive systems began to spring up all over this country. They began to tell some very interesting tales. Evaluation studies and reviews began to show that with less resources, with different kinds of involvement, with a different type of planning and participation process, another method of fulfilling a public function

can work, not to the extent of it being a utopia or a panacea, but to the extent that the participants and the benefactees feel a participation and feel a commitment, and can believe.

Community action agencies gained power

And so, community action agencies began to become, in community after community, a power to be dealt with, to either assist you and join with you in creating some new methodology; or, in effect, to be those institutions which help squash your efforts and replace them with others. And I say "yours" in the plural sense, not just vocational education, but yours in the sense and ours in the sense that we're talking about the whole spectrum of human services dealt with through public institutions.

We had some very interesting times in the middle sixties as a result of this. Toward the latter part of the sixties, when Congress was on a certain bent, there was a great movement to squash this maverick activity and return to what we are more comfortable with; that is, those things that we know best, which are part of the system. And the establishment thought they could carry this out.

The best evaluation of the activity that occurred was evidenced by the public outcry across this country; and Congress, instead of killing the Economic Opportunity Act after its two years, gave it new life, and gave it new funds. Those public institutions which had criticized the decisions of Congress in 1964 were now saying, "We need them. We need them, because in many instances we aren't able to really do that part of the job yet."

So a new life was given to it in '66, with amendments in '67; and the most recent extension, this past period in Congress.

Now if you look at this whole process as a process of evolutionary change, systematically occurring, mostly by accident rather than by plan, you can begin to see that this became the base for what we are really getting ready to go into in the '70's. That has to do with a whole new comprehensive delivery system—that which gets us out of our functional bag of saying, "Well, we will worry about just what we do and doing it better," into a posture in which we're saying, "What part does what we have bear upon another, and what, in effect, becomes the trade-off between some of these activities." For an example: What's the trade-off between your welfare policy and your educational policy in a community? What's the trade-off between the economic development plan of a community and its manpower needs? As you know, in this country, until just this last year we've had an Economic Advisory Council to the President of the United States, with no membership by the Secretary of Labor. And yet, if you know anything about the Federal departmental structure, there has to be a direct correlation between the policies and activities of the Secretary of Labor and any economic policy that's taking place in this country. I'm not a political man so I'm not on any bandwagon in terms of this, but I must point out, it's only been in this past year that the Economic Council had been expanded to include the Labor Secretary in order to bring into it a perspective that relates to what we're doing in that regard.

Interdisciplinary relationships

And so, as we start to make assessments on public agency responsibilities to deal with a myriad of problems, primarily social in nature, in any given community across this country, we have to take cognizance of the fact that there is an inter-professional disciplinary relationship to the solution of human problems. Your work or my work in a vacuum, in all honesty, isn't worth a grain of salt. It's only worth that plus more if you have dealt with the comprehensive needs of people, not simply one need. I think it's a great tribute to the times when we begin to talk together from different vantage points, and begin to learn and take our blinders off about what we can do cooperatively in the mixing of our services and the mixing of our resources in a way in which we can maximize our assistance to the individual.

I want to talk about system linkage under the broad spectrum of what our program calls planning models for student services." Looking at where we came from in Manpower, I'd like to share with you a little bit about our early beginnings because, as you know, Manpower still is not an accreditable field. There is no course of study validated by the educational institutions of higher education which says that there is a profession called Manpower. In effect, we have become a hybrid. We exist only because, in effect, there have been some shortcomings in other systems. But what we had the great opportunity to do just as recently as eight years ago was to develop a group of people reflecting a cross-disciplinary background. They began by saying, "What are we here for?" And the answer to that question primarily was, "We are here to serve people."

From that question came, "Well, what is it in the needs of people that you have to give accountance for?" And we began to run, in effect, a laundry list of the kinds of things that are necessary to fulfill the satisfaction of being a person. And, in effect, we said, the human has emotional needs, he has intellectual needs, and he has financial needs. A lot of things come under those three broad categories. And a lot of professional expertise backs them up. Physical was the fourth one.

So as we began to look at this new thing called Manpower, we weren't concerned just about how well this guy or gal had done in school, and to pick up from that point and provide the rest of his educational needs and hook him to a job. We were interested in those aspects of his living which impact upon his accessibility and interest in learning, whether it was through an educational process of one kind or another.

We began to identify some ingredients of what we wanted to have in Manpower against the charge that we had to deliver to people. And we began to say that there are a number of things that are very basic.

But I guess the biggest difference may be in the way in which we secure them. We recognize that out in the community at large, as opposed to a captive audience, we have a universe of needs. We know something about this

universe of needs from a number of data that we received. And on the basis of some of those benchmarks, we began to develop a plan of approach.

One system, which Manpower used to deal with this, which is still in an evolutionary process of refinement, was our concentrated employment system. We said that it wasn't enough to simply provide this person, whether he was a high school graduate or drop-out or what-have-you, additional skills training and move him to a job. If it were that simple, we would have solved this problem long ago.

Attitudes must change

First, we felt that there had to be something done in terms of attitude among the potential benefactors. We had to do that by developing some credibility in the community. So the first thought was, let's move what we have nearer to the people. Let's not exist for the sake of our beautiful physical building at any one location in town, and have an attitude which says, "If you want what we have, here's where we are." Instead, our attitude should say, "We are interested in you, wherever you are, and to the maximum extent possible, we're going to come to you with it." And so the first work in this house was decentralization of services through neighborhood approaches.

We also said, "That's not enough either. We can be one block away from you but if you don't really have a way of understanding and believing in what we have here, that's not any better than being in a central location in the heart of town." So we began to add a brick called Outreach. Through joining with the CAP agency and neighborhood workers, we began to develop training programs to let the neighborhood workers know what we had available so that as they touched the population, they knew something about what we had as an assist to that population's needs. Within a period of time, that process snowballed to a point where you didn't really need to spend so much time on the Outreach because, pretty soon, the word got around and they started finding you. The problem then became whether you had the resources to deal with it all or not.

We began to consider another dimension. After we've reached them and after we have brought them in, how are they handled and what are we going to do with them? So we began to develop what we call an employability development team concept. In effect, we said that the best counselor cannot do this job alone. He needs to have some back-up assistance. The team needs to think together on the needs of each individual in order to plan for and with that person an employability plan—one that the employee or the potential employee, enrollee, applicant, call it what you will, will accept, believe in, and do something about achieving. And so we teamed up a counselor, a manpower development specialist, a job developer, and a job coach. All of these names may be foreign to some of you and very familiar to others.

Specialized help needed

The job developer is an obvious man. He finds the kinds of jobs that these enrollees with this team need to have for their placement or skill training work experience situation.

The coach is, in effect, a buddy. During this period of transition, if a person needs it he will go past the door of that person in the morning and knock on it, get him up out of bed, and get him there. And you say, "Well, if somebody's got to have all that, he doesn't really want to receive any help." But we're talking about breaking a syndrome; responses to negatives that have stood in the way of many people moving ahead in the mainstream of this society. And for some, that's what it takes. We've got enough experience to prove that it will work, and it doesn't become a dependence factor, either.

The manpower development specialist's job is to know about what kind of training, in an educational system or otherwise, is the most appropriate one to feed this person in and out of while developing him. The counselor puts all of this together in his or her personal dealings with the client. We back this up with new kinds of testing, with the work-sampling approach which doesn't depend upon the written test that has been so much of an obstacle to so many people. We back it with a kind of orientation program that deals with the relevance of the problems of those persons to what they are entering into. We back it with, where necessary, appropriate work experiences instead of skills training, and with the recognition that everybody isn't ready for skills training at a given instant. We give the kind of educational support that's either remedial or vocational or a combination of the two, with training programs or retraining programs where they may be appropriate. We offer a back-stop of assistance through job placement and referral, development and follow-up that's relevant to the needs of that individual. And finally, we add the kinds of additional assistance necessary to prevent the person from falling out for reasons outside of his control, namely, health, or need for day care, or housing as each may relate. These are the things which contribute most to the drop-out statistics as we've analyzed them.

Our view has been that we cannot do any of what we have just said in an atmosphere where Manpower is the know-all, end-all for all of this. In effect, we have tried to benefit from the mistakes made over the years by institutions who have tried to put together at least our portion of this activity in a more fully comprehensive method. Most important, we are not here to substitute for any other institution. That brings us to the program today and what we're trying to do as a parallel system to join together not only with educational institutions but those other institutions which impact upon personal needs. We have done this through a beginning in what we call a comprehensive or cooperative area manpower planning system. For many of you, it's called CAMPS, and for many of you, it's been a turn-off. It's been a turn-off because of certain ingredients that yet are to come about; and, in effect, because too many professional participants have not fully comprehended and shared the vantage point of what this can do to help them in their area. To too many it appears as if it's only something that helps Manpower, and, you know, we can be altruistic up to a point.

After that point, we've got to pay attention to our own. And with that kind of head-in-the-sand concept, in many areas, CAMPS has not been what it is designed to be. In many areas, it says, it's not what it's designed to be because it is not a decision-making body. It doesn't really decide what funds it has and what it can do with them; and so, in effect, it's a paper tiger.

Communities overlap

Depending on how you look at it, it's possible to draw that conclusion. But in the very exercise itself, there rests the possibility of dialogue, communications, negotiations, agreements, interaction with other disciplines against that same population that's in your community. You know, we don't have one community, and you've got another, and health has another, and vocational rehabilitation has another. They are all one and the same people. Perhaps, if we planned and analyzed total needs together and began to implement systems and approaches and programs that build on the most positive of those aspects, we might find that we will erode the problem more than we are doing at the present time. So all I can present to you, in effect, is a system that, if worked at, can succeed. I can guarantee you no success if the factors that are necessary to that corollary system aren't adhered to. You have certain very basic ones in any planning system. But for the fact that these begin to look outside of the manpower field, they perhaps may have some value. Because in all too many instances we know that in other educational systems, they tend to look only within. And I'm suggesting that the looking out at the same time has equal need, merit, and value.

So in our CAMPS system, we start with a manpower needs-and-problems exercise. We start with an analysis based on our population, their occupations, residential patterns, and characteristics. We do that on the basis of not just what we know from our limited vantage point of the employment service activity and manpower systems, wherever they are; but by, in effect, calling upon all of the participants to put their inputs into this, so that we don't make the mistake of an additive arrangement whereby we have a 20,000 need, but through the additive process of not doing a comprehensive look, someone could think we had 100,000 if we take five into two and each one has twenty. We must eliminate the possibilities for duplication of information and duplication of counts that began to water down what we really need to know as the first stage in beginning a plan together on providing a service.

So from our analytical manpower needs-and-problems exercise, we then begin to look at our area economic outlook. What are the trends that are taking place in our community? What are the manpower needs of our employers? What are the employment levels like? Have the unemployment levels gone up, down, or stayed constant? They become key benchmarks in terms of the next exercise of beginning to analyze the program resources, both at the local and federal levels, to begin to carry out what we are charged with doing.

This program resource examination and determination begins to give you a first-blush look at examining something of the status of the existing program; and the willingness of those who are operating programs to make significant changes in them as the situation may suggest. Once we've done those things, we're in the position to then begin to say, how are the resources distributed? And it isn't a matter of saying, "I'll give this much to you and I'll give that much to you, and I'll give that much to you." You're getting yours the same say you've gotten it over the years. With this body of knowledge and with your full understanding of the total dimensions of the problem, you, in effect, have the opportunity to modify in a different way what you may have done or could do with the resources that are given to you. Out of the collected mileage that this may provide, you may be in a posture to secure some additional that you wouldn't have gotten by going it alone. This exercise begins to build upon the obvious necessity of linkages; and we're talking about the eradication of unnecessary duplication, and, mind you, I say, unnecessary duplication, because some duplication in itself is healthy. More important, some surface duplication is really not duplication. You know, if somebody over here is teaching one course, someone else over here is teaching another course—the same course—but this one is successful and that one is not, that's not duplication. Where unnecessary duplication exists, we say we can build institutions to make them more relevant if we join together in these ways. In all honesty, the more that manpower can help vocational education, the quicker we can go out of business.

Maximizing resources

Some will say this will never happen. The truth of it is, that as we aspire to that, we can maximize the potential of each resource. I don't have to duplicate unnecessarily what the head of our vocational education system here in the District has available to assist the needs of our population. But if we work together, we back against each other and out of that comes something hopefully better than what was there before.

That, in effect, is what the Cooperative Area Manpower Planning System is all about. It's one of four blocks under this outreach which impact upon people, which starts to tell you something about the health of our society and all that it may mean. It starts to say whether we will have believers in our public institutions or not, as you see a challenge day by day. And I leave for you the proposition that although what I've said is no great magic, and certainly is a far cry from perfection, what other alternatives do we have which have the built-up mileage, credibility, and beginning that the last five years' experiences have been teaching us. More important, the challenge to all of us is how responsive can our present institutions be to these necessary changes.

I recently received an invitation to go to a symposium at one of our creditable institutions of higher education. The institution invited a group of participants for this symposium to talk about, in effect, the change of the curriculum of that particular school within that university, to make what it had as a master's program more relevant to the enrolled students and to future students, as the experiences in the community suggested modifications were necessary.

So I put together an outline and had some of my staff do some specific research in certain aspects of this that would back up some of the points that we wanted to contribute. And we went though this exercise for two days during which time most of the faculty participated. In addition, a fair number of the students sat around the edges of the room as observers. Going into the second half of the last day, we started getting the message that the only reason the students were there was that they insisted on being there. And they had made it so uncomfortable for the administration that they couldn't say, no. So they set certain conditions for attendance by students.

Before the closing summary, we began to learn more about what a state educational institution is really up against when the dean of the school referred to a student who happened to be sitting over near a side wall. The dean said, "We brought this student into the graduate school as a 'special student'." And the definition of that was that this man did not meet the entry requirements for this master's program because, unfortunately, he had gone to a little black school in the South, and he didn't have all the credits that this school called for. Ironically enough, this was the young man's second year in this college. He was expected to graduate this coming June 1970. And the dean was worried about whether he could graduate him. He said that the fellow had passed everything that the master's program calls for but he had flunked a couple of those undergraduate courses which were supposed to have been the bases for the graduate work. Rather interesting: he passed the graduate work but flunked the undergrad and so now he can't graduate, because this school says, you have to have all those things on paper before you can walk across that stage. It also says, that you have to have a B average. Those two things are more important than anything else. Not from the dean's point of view, but that's what the system said it was. And the dean said, "Do you know what it takes to get a change in what I just portrayed to you? It takes an act of the state legislature."

Now, you know, that's beyond the realm of the educational institution to do. You never saw such a change in people who had come from all over these United States to that institution as when they heard that story. Because the kinds of things that we had been saying for a day and a half, were 'way beyond what it took to waive a prerequisite which was irrelevant. We were talking about changes of curriculum which went far beyond the question of a waiver of a course; in effect, we were talking about changing the substance of what they were doing. And the conference became a "Thank you for coming," and, "Gee, we wish we could do something about what you presented."

There's really nothing more bureaucratic than institutions of higher education. Regardless of whether the times suggest that or not, we are in a posture of saying, "Let's pay attention to keeping the systems intact," more than we are in the posture of saying, "Let's do something for people." And if we don't change that, ladies and gentlemen, we won't have the institutions to protect.

PERT
PROGRAM EVALUATION AND REVIEW TECHNIQUE

Robert L. McKee
Program Director
Area Manpower Institutes for Development of Staff
Washington Technical Institute

History

PERT was developed in 1958 through a cooperative effort of Navy Special Projects Office, Lockheed Aircraft and Booz, Allen and Hamilton, a management consulting firm, and is credited with cutting years and dollars from the Polaris Missile development program. It is a technique for focusing management attention on danger signals which require remedial decisions and on areas of effort for which 'trade-offs' in time, resources or technical performance might improve the capacity to meet major deadlines.

The basic foundation of PERT is the 'network', a pictorial representation of the interdependencies and inter-relationships of the events and activities which comprise a project from the instant of its conception to the completion of the end product.

PERT is particularly useful in the successful management of highly complex, multi-level projects extending over long periods of time; it enables management not only to direct, plan, and control the physical aspects of a production job but to utilize effectively the intellectual resources involved in modern business and industrial organizations.

PERT makes its greatest contributions to the management team in those projects involving initial, first-time, nonrepetitive activities where no previous landmarks exist to direct planning or controlling of the areas involved: Research and development projects, product promotion, preparation of legal briefs, theatrical productions, college construction, curriculum development, and even the planning of a marriage—all these are likely to lend themselves to the use of PERT. The fact that the government requires that all defense department contracts be submitted in PERT form indicates the importance of understanding the theories and practices of PERT. Similarly, U.S.O.E. funds millions of dollars' worth of federal projects almost as complex. For those concerned with the use of computers PERT is an invaluable aid; programs exist for very large as well as small computers. A very involved project necessitating two or three years' lead time would naturally require a more sophisticated computer than would a simple 200-item project involving one or two persons over a period of a couple of months.

Why Use PERT

There are four major criteria which indicate the necessity to use PERT:

1) The project must have a specified end objective, the accomplishment of which must be planned for within specified time limits, using certain resources. Such factors as the unusualness or uniqueness of the project, initial runs, or unknown quantities indicate use of PERT.
2) The project must have a scheduled completion time or a definite deadline to be met. If termination is indefinite and vague there is no need for tight, careful, time management.
3) The complexity of the project largely determines the need for using PERT. A minimum project would involve one or two persons for about two months in the use of a "network" of 25 or 30 events. A project of over 200 events would involve using automated PERT.
4) The degree of uncertainty of the definition of program elements influences the decision to use PERT; for example, initial research and development projects as against standard production-type jobs.

In addition to these major considerations, the willingness of top management to implement the use of PERT by strong policy statements, by involvement of every member of the team in the use of PERT, and the adequate orientation of all users of the device to its principles is essential. PERT may be instituted by a consultant specialist or one particular member of the management team may be trained to the use of PERT—8 hours of lectures and practical work are a minimum instruction period.

When to Begin Use of PERT

PERT forces good planning. Since a poor plan will result in an unworkable PERT network it is essential to begin the use of PERT as soon as a project is proposed. The initial planning, development, scheduling, testing, and recycling processes must be clearly defined at the beginning of a project. Dr. Cooke, Ohio State's PERT expert, states that, "Planning a research and development project may require more time than the research work itself," and for most users of PERT that is true.

PERT Network

The network is the diagram which visibly demonstrates the job to be done. It is the distinguishing characteristic of PERT. It portrays graphically the tasks to be accomplished and the interrelationships, interdependencies, and constraints —time, money, or manpower—which will operate within the structure.

Usually, the network is developed from some outline of tasks to be done; the old Gantt chart, milestone chart, or activity cards will assist in making a breakdown of the total package into the separate, identifiable "work packages" which will be assigned to specific persons to be completed at specific times.

Each network will begin with an "event" which will usually be numbered 1, .001, or some numerical statement indicating this is "begin job". It will terminate with the "end item" which signifies the completion of the job. Events, as used in PERT, are usually designated by a bubble or a box which represents a completed or started job or activity. It requires no time and no resources. The activity referred to in PERT is represented by an arrow linking two events and it represents the work done to get from one instant in time, or one point which marks the beginning of an activity or its termination, to another.

Since the PERT network is designed to be viable it will grow and develop constantly during the lifetime of the project it depicts. Therefore, the master network will be drawn and redrawn many times. To begin with, after jobs to be done have been classified in some way, and given some priorities, the simple approach is to secure butcher paper or engineering fade-out vellum if available, and to begin to draw bubbles and arrows as jobs are defined. There are a number of specific rules for drawing a network. Only one line may connect any two "events". Lines may enter or continue from any event to another but there may be no network "looping"—that is, to connect a series of "events" or jobs and complete a "loop" or circle in so doing.

If "activity" cards are used, much of the necessary information may be entered on these cards and then transferred to the network. For instance, the prior and succeeding event will be identified, the activity will be named, the three time-estimates and the actual expected completion date may be entered. When the order of activities is outlined the cards may be numbered sequentially and these numbers actually allotted to the bubbles on your network. Do not worry if lines cross each other on your initial network. It will be redrawn many times. It is important to establish, as soon as possible, the real logic of the planning, to settle the time and resources priorities scales and the rough outline of the sequence of activities needed to complete the job.

Once you have prepared a master network containing the basic major events necessary to complete the job it may be decided to begin to break down the master network into its sub-charts. In a large complex activity such as the establishment of a college or the production of a missile there will be many sub-charts. For instance, in completing the Northern Virginia Community College network, six charts were developed and many individuals further broke down their assigned tasks into additional charts. In putting a network together the events which indicate the completion of some major portion of work are identified by a special shape of bubble, or extra sided box; these are called "interfaces" and they indicate both points of completion of jobs and starts of other major activities. It seems somewhat easier to follow logic if network events are numbered sequentially but many programs permit random numbering. This is largely personal choice. However, it is easier to detect an error or a missing event if the numbers follow each other in logical order.

Though all networking flows from left to right, in preparing to draw an initial network for a first-time job, it is frequently desirable to begin with the "end item" and work backward step by step to the beginning, especially if this has not been done before. This, again, is a matter of personal preference.

Once the work packages have been designated and each job has been allotted to a specific person, the PERT expert who will be responsible for completing the network will secure from the person who will do each particular task an estimate of the time required to do the job. If you intend to use PERT COST this is the time to make the decisions as to the rough estimates for money expenditures.

PERT Times

One of the great benefits of PERT over many other planning devices is that it forces good planning and demands close time estimates for accomplishing jobs. For instance, in many plants when a supervisor asks a foreman for an estimate of the time needed to get his men to produce a specific job, the foreman will reason: if he allows too short a time, he will be called inefficient for not accomplishing the job; if he states exactly the amount of time he knows will be required and some unforeseen event delays this, he will be considered a poor manager. The result: he gives an estimate heavily loaded toward a long time period to complete a job which he knows will never require that much time; then when the supervisor chops out a lump of time, as the foreman knows he will, he will still have ample time to get the job done. This is a poor way to plan and control.

On the other hand, in securing time estimates for PERT from the man who will do the job, he is asked to honestly state 1) the time he really estimates is needed to do the job; 2) a time estimate so brief that there would be perhaps one chance in a hundred of actual completion; and 3) a very pessimistic time estimate, so lengthy that there would be very little possibility of requiring that amount of time. These three time estimates are called 1) Most likely, 2) Optimistic, and 3) Pessimistic and are given symbols for use in the mathematical equations used to predict actual completion dates. They are 1) m, 2) a, and 3) b.

The PERT analyst uses the following equation to arrive at a projected time for a particular task. This is called the Expected Elapsed Time and is represented by what we call T_e or "T small sub e": a + 4m + b/over 6, i.e. if time estimates are 3-5-8, the expected elapsed time necessary to do that job would be 3 + 20 + 8/over 6 or 5.1 weeks of time. This method of estimating time is almost exactly the same as using the Beta curve distribution. There are two other times which have great importance in predicting the completion dates of projects: the Earliest Expected Date symbolized T_E (T big sub e) and Latest Allowable Date symbolized T_L (T sub L).

Most computer programs are designed to calculate these three kinds of times, as well as what is called the Critical Path and other limit paths throughout the network. It is entirely possible to calculate these times and paths by hand. Again, the complexity of the program will determine whether or not it can easily and within the time limits be computed by hand. There are a couple of hand-operated devices similar to simple desk calculators; one is a series of circular discs which may be manipulated to calculate these times.

Some computers produce an "audit list" which lists in proper order all jobs to be done—all events and activities throughout the network—and it may be used as a check list to assure the inclusion of every item in the network. Some computer reports print out data concerning Latest and Earliest Times, some show all network paths with the slack for each, others show only the Critical Path. One, called an Organization or Responsibility Report, indicates activities assigned to a particular department or unit. Others show activity variance, standard deviation, and probability statements. However, the primary necessity is for the Critical Path which must be the first to be reviewed. Incompatible dates, incomplete items, etc. are other items on some computers.

The cost of processing the network on the computer will, of course, depend upon the complexity of the program, and the kinds and amounts of information requested. Small networks can be processed on a small computer. It may be desirable to do a very small job by hand. It is not necessary to use a computer program to use PERT but when the network becomes very large the computation involved will indicate the necessity to automate the data.

Three major report forms are:

1) The Project Outlook Report which shows the degree to which the project is running ahead or behind schedule.
2) The E-L or milestone chart which outlines the earliest and latest dates which will allow the completion of a job. A check of this report indicates the amount of slack available between two or more lines of activity.
3) The PERT Analysis Report which consists of a narrative description of the problems identified along with some suggestions for solutions. This report is usually prepared by appropriate staff personnel after studying and analyzing the data generated by hand or computer. The manager is not committed to acceptance of any suggestion involved. He will make his decision upon the basis of information he receives.

Any or all of these reports may be generated weekly, bi-monthly, or as desired.

T_E and T_L Statistical Computations and Critical Path

We have used some terms which may need explanation. Critical Path is a most vital concern of anyone working with PERT. This is the pathway through the network which will require the longest period of time to accomplish in order to complete the job on time. If there is any deviation from the time indicated for completion of events along this path the termination date for the project will be delayed. There may be more than one Critical Path through a large network. Critical Paths may change and become noncritical by the addition of money or resources. However, if manpower or other

resources are removed from a noncritical path and added to the Critical Path care must be exercised that another Critical Path is created without the resources or energies to manage it.

We find the Critical Path throughout the network through a process of determining, for every event on the network, two times (in addition to the expected elapsed time for the activity): 1) the T_E, or the Earliest Expected Time—this is the very earliest date at which this job may be completed and it is computed by adding to the time required to complete all prior events along the path, the time to do this particular path; in other words, all the times along the path up to the event are summed and the amount of time arrived at is the Earliest Expected Time at which that event can be completed.

T_L, or Latest Allowable Time is determined in exactly the opposite manner, for this time is the very latest date on which a specific event can be completed without delaying the completion date of the event on that path. To compute T_L, begin with the final, end event and subtract from it the estimated elapsed times (T_e's) of all preceding events to and including that of the event in question. T_L is the figure from which T_E is subtracted to arrive at the slack for events along various paths. As we stated earlier, the path with the least positive or greatest negative slack is the Critical Path—the path which will require the longest period of time to complete.

EXAMPLE

A student wishes to major in Mathematics and minor in Physics. He must take seven math courses, two statistics courses, and two physics courses, plus a mathematical physics course. These are all one-term courses. What is the minimum number of terms it will take for him to finish his requirements, ignoring all other course requirements and constraints? The twelve courses are listed with their prerequisites.

No.	Courses	Prerequisites
	Start	None
M 101	Calculus I	Start
M 102	Calculus II	M 101
M 103	Finite Mathematics	Start
M 104	Calculus III	M 102, M 103
S1	Elem. Statistics	M 103
S2	Advanced Statistics	S1, M 102
P1	Elementary Physics	M 101
P2	Advanced Physics	P1, M 102
M 108	Advanced Calculus	M 104
M 109	Mathematical Physics	M 108, P2
M 110	Complex Variable	M 108
M 111	Real Variable	M 110
	Finish	M 109, M 111, S2

In the example given assume that the student delays the following courses by the amounts indicated, but elects all other courses as early as possible. By how much is the final completion time of his major delayed?

A) M 103 one term.
B) M 103 one term and S1 four terms.
C) M 101 two terms and M 108 one term.
D) P2 two terms and M 109 one term.

ANSWERS:

A) 0
B) 2
C) 3
D) 1

See PERT Bibliography on page 62.

ESTABLISHING EDUCATIONAL OBJECTIVES

Kenneth B. Hoyt
Professor of Education
University of Maryland

That which must be done will be done. Perhaps this adaptation of the old "if there's a will, there's a way" theme is appropriate to use as we consider problems involved in establishing educational objectives for disadvantaged inner city youth. Certainly, this, as is true of all other topics under consideration at this conference, is one where our ignorance is much more obvious than our knowledge. Yet, the alternatives facing us if we fail to act are bound to motivate us to attempt to move from ignorance toward at least the beginnings of insight.

We have failed thousands of disadvantaged inner city youth with traditional approaches to education—including vocational education. It seems safe to say we have ample evidence of what not to do. Such evidence is of doubtful help as we try to discover positive solutions to the problem.

The problem of helping disadvantaged youth establish educational objectives becomes especially acute in the case of vocational education—that part of American Education which, in the minds of many people, already carries the stigma of being considered as "second class" education for "second class" citizens. Clearly, our broad, overall objective is to help such students see themselves as "first class" citizens and vocational education as a "first class" solution to their immediate educational problems. We will concern ourselves with suggested approaches and activities aimed at attainment of that objective.

To set the stage for these remarks, let us assume that, through a variety of both in-school and outreach activities, we have succeeded in convincing disadvantaged inner city youth that they should consider vocational education as one possible course of action available to them. Given this assumption, the major question under consideration here is, how do we help youth move from this point to the point of actual enrollment in meaningful and appropriate vocational education activities?

This major question breaks naturally into two sub-questions. 1. How do we help youth make decisions about vocational education; and 2. How do we make realistic decisions regarding the ability of youth to profit from vocational education? These two sub-questions will be considered in reverse order in this paper.

The first sub-question is how do we assess the potential of youth to profit from vocational education? The one thing disadvantaged youth least need is to experience failure. They are well acquainted with that concept already. We know we must point them toward success. We also know that our traditional paper and pencil approaches aimed at the prediction of academic success are so biased against disadvantaged youth as to make them of marginal value. New approaches are needed in student appraisal procedures for disadvantaged youth. It is my contention that the most viable of these new approaches will arise out of the cooperative efforts of specialists in the guidance and in the vocational education areas.

In making this assumption, I am not recommending the abolishment of paper and pencil tests for use in the guidance and/or selection of all students for vocational education. To do so would be as big a mistake as to assume paper and pencil tests to be adequate, by themselves, as means of student appraisal. We must guard against both extremes if we want the really best solutions to the problem.

No magical categories

I am referring, of course, to the simple fact that the disadvantaged, like any other classified segment of society, cannot be thought of as in a single, magical category in which individual differences fail to exist. To say traditional paper and pencil tests are inappropriate for many disadvantaged youth certainly does not mean they are inappropriate for all.

Within the total range of disadvantaged, inner city youth, there will be many whose native level of academic aptitude is high. Such youth should be thinking about education beyond the high school in either a regular four-year college or university setting or, depending on the nature of their educational motivations, in one of several special forms of higher education such as represented by Washington Technical Institute. There is no reason to think that paper and pencil tests are inappropriate for use with these students. That is, the fact that such youth do find themselves unfairly compared with youth from other cultures becomes relevant only when such comparisons are made.

Several good paper and pencil tests that would be appropriate for use with these students contemplating attendance at post high school vocational-technical institutions currently exist. In the field of interest measurement, I am particularly impressed with the positive potential of the *Ohio Vocational Interest Survey* published by Harcourt, Brace, and World. This new measure has a very low reading level, a great deal of construct validity, and a demonstrated relationship with a D.O.T. occupational classification format. I think it deserves serious consideration for use with those who can read it.

In the area of aptitude-achievement testing, I find high potential existing in the *Daily Vocational Tests* published by the Houghton-Mifflin Company. In my own research, this test battery has consistently produced correlations with grades in post high school vocational education in the neighborhood of .50—about as good as the traditional college admittance tests predict success in college. No, I am not one of those who would automatically throw out the concept of using standardized paper and pencil tests in the guidance and/or the selection of disadvantaged students for post high school vocational education.

In spite of this, I am firmly convinced that major solutions to problems of assessing educational potential of disadvantaged youth do not lie in paper and pencil testing. Rather, it seems to me the most positive future lies in development and application of work-simulation performance type measures. This is not a new idea. Yet, in practice, it does not seem to have advanced very far beyond the idea stage. My goal, in discussing this topic here, is hopefully to provide sufficient background and stimulation so that those attending this conference will carry the idea out in actual practice.

Application of the concept

To do this, let me first describe in general terms the best application of the concept that I have seen. The setting in which I observed this was Oklahoma State Tech, Okmulgee, Oklahoma—a residential, vocational school operating at the post high school level. This school enrolls large numbers of disadvantaged students, particularly those who come from Indian reservations and from the economically depressed sections of Tulsa and Oklahoma City.

At Oklahoma State Tech, each term, large numbers of students who are completely undecided regarding which area of vocational education they should enter enroll in the college. Such students are placed in what they call their Evaluation Center for periods ranging from a few days to as much as 30 days or more. There, they can choose from among a variety of occupational performance tests that are available to them. For example, they may choose to work on an old car there—or on repair of a typewriter, on a drafting board, with basic wiring boards, or with any of a number of other pieces of actual vocational education equipment which are available.

Each student is tested and graded on an individual basis by trained evaluators in a series of gradated achievement tasks. The goal is not to let each student discover where he fails but rather to let him discover where he succeeds. Following assessment in any given area, the student may, through counseling and consultation with instructors, elect to start classes in that area. If he chooses not to do this, he can elect yet another area of testing. If a student is completely undecided, he may elect to go through testing in as many areas as he chooses and delay all actual decision making until such testing is complete.

Once he has completed testing and has been placed in a particular area of vocational education for training, he may, if not doing well, either return voluntarily to the evaluation center for further testing or may be referred there by his instructor.

In practice, of course, the system at Oklahoma State Tech does not always work as ideally as I have pictured it here. Yet, for purposes of this paper, I would like to move now from this actual example to an even more idealistic view of work simulation testing as a means of assessing student potential to profit from vocational education. I do so because of a basic belief I hold that the most realistic approach we can take in helping the disadvantaged is to begin with a completely idealistic view. By doing so, we may come closer to realizing the ideal than we ever thought possible.

My ideal begins with a series of workshops for vocational education staff members from all settings in the community that supposedly will serve these youth. The prime purpose of such workshops will be the identification of specific vocational tasks that: (a) Have the widest possible application to the greatest number of specific occupational areas; (b) Can be learned in a minimal amount of time; (c) Represent critically important skills essential for routine use; (d) Can be measured objectively in terms of performance on the task. Such tasks need to be identified for each occupational area, in a gradated series ranging from a very low to a relatively sophisticated level of performance. They should also be of such a nature that the student will be able to perceive them as directly related to occupational competence. That is, the initial concern should be relatively more concerned with credibility for the student than with statistical validity.

The basis for determining such tasks should come out of the content of the training areas. In each training area the crucial question to be asked is, what kinds of skills are of critical importance as basic necessities for anyone who wishes to acquire competency in this area? In some areas, this may require primary concentration, for example, on physical strength; in others on manual dexterity with large tools; in others a high degree of eye-hand coordination; a certain degree of artistic aptitude; a degree of patience and perseverance; a degree of ability to follow printed instructions; or any of a number of other kinds of basic occupational skills.

There will be different ways of assessing these skills for different occupational areas depending on the specific kind of equipment most frequently employed in that area. I would like to see a concentration of effort aimed at assessing such basic abilities through thinking about simple tasks that could be performed using the basic tools and equipment most common to that area. The fact that the net result may be a variety of means of assessing potential in the same basic skill area is something to be commended, not deplored. The crucial importance of using real job equipment for purposes of testing cannot be over-emphasized. I am quite willing to sacrifice whatever efficiency may result from using a more generalizable, yet less directly job-related, kind of assessment device.

Having identified such basic tasks, the next step will be the construction of test situations for use in assessing student potential for task performance. Again, the expertise of the vocational education specialist is essential for purposes of identifying degrees of skills that could be exhibited by a potential trainee. Exact determination of such levels will await tryout by actual students but instructors should have fairly good ideas based on the ways in which their former students have demonstrated ability to learn such tasks in the past.

Once this is done, a means must be devised for, in effect, conducting mini-training with potential trainees aimed at helping them learn quickly how to perform the task. Such mini-training sessions should be an essential part of the testing situation.

Those who serve as test administrators, in my ideal system, will themselves be students in the actual training areas who perform this test administrator function as a part-time job under the supervision of skilled evaluators. These test situations should be arranged for individual administration in an unhurried and untimed manner with ample opportunity for verbal exchange between the potential trainee and the actual vocational education student who is serving as test administrator.

When a potential trainee comes to the evaluation center, no systematic attempt would be made to acquaint him with all of the possible alternatives to testing that could be made available to him. I think this is one of the mistakes we have made in the past. We have offered too many choice opportunities too suddenly to students who are too inexperienced in the decision making process to really know how to choose. Instead, I would initiate a system where the potential trainee is allowed to circulate throughout the evaluation area, examining each of the kinds of equipment present, and then deciding for himself on which kind of equipment he wants to begin. Operationally, this experience in itself will serve as an effective beginning on assessment of vocational interest.

Tasks related to success

The tasks that will work best will be those that most closely approximate the basic skills the student will actually be asked to learn if he chooses to enroll in the training program. That is, I would, in my ideal system, make a direct and meaningful relationship between what goes on in the evaluation center with what goes on in the classroom. This would, I feel, have advantages not only in terms of predictive validity, but also in helping the student feel initially comfortable and confident when he begins his actual training program.

Of course, the system would ideally be validated against actual performance in the classroom or OJT training program. The means for doing this is automatically assured simply by initially operating the system with no selection-out process taking place at all. That is, if the student elects to enter, he should be allowed to do so. Again, I know this is to invite initial inefficiency but I believe it will be a price well worth paying.

The second sub-question is how do we help youth assess educational objectives? Given the operation of some kind of assessment center, the question remains of how we can help youth assess educational objectives and incorporate certain of these as their own. There is no way in which this can be realistically discussed without commenting briefly on the possible nature of actual vocational training programs that are to be made available to such youth.

It is my feeling that vocational training programs that will appeal most to disadvantaged youth generally will be ones that are divided in very small, finite units of instruction. Each such unit of instruction should be further sub-divided into three phases—a didactic instructional phase, a laboratory practice phase, and a job application phase, each of which should be performed on a daily basis. The training programs themselves should each be designed so as to make termination possible at a variety of levels of job competence. At each level, it should be possible for the student to qualify for some kind of employment.

Under such a system, several advantages are present which are currently lacking in traditional vocational education instructional approaches. First, if the units can be made small enough, the student can very quickly discover success at some level. We cannot expect a student who has little hope to suddenly acquire the degree of hope that is necessary if he is to enroll in a vocational education program requiring several weeks before he knows how he is doing. Second, a system such as this would allow a student to begin training at almost any time he chooses. That is, the units should, to the maximum extent possible, be independent rather than dependent on each other. It should not be necessary, except in terms of relatively large blocks, for the student to have completed one such small unit prior to beginning the next. For example, in auto mechanics, there is no good reason why one must learn engine tuneup prior to learning front-end alignment. Third, such a system can be built so that it does produce job-ready individuals at some level at multiple points in the total training system. In this sense, it seems to me we need a new definition of what is a school dropout. Instead of simply considering him as one who left a given training program prior to completion, we should consider a dropout as one who left with no marketable job skill. If we could think in these ways, we might very well expect students to stay in school awhile, stop to work awhile, and then return to school to acquire skills at a higher level.

The total educational program to which the student could be exposed should consist of vocational training in a wide variety of occupational areas. To the extent that basic skills required for one area are related to another, this should be emphasized. The student should be free to shift from one area to another. I know no other way in which such a system could work.

Given a system such as this along with the kind of assessment system I described earlier, the process of helping the student assess his own educational objectives can be begun. Such a process must, of course, be built on whatever set of activities are encompassed in outreach and initial admissions activities. That is, there is, so far as I am concerned, no magical dividing point where one can clearly point to a given activity and label it as, say, "outreach" while another would be just as clearly labeled as "counseling." The fact that one particular kind of activity is used in both processes is something to be encouraged, not deplored.

In choosing an educational training area, the student's first question must logically be related to his probabilities of being able to successfully complete training in that area at some level of job competency. This, hopefully, will be accomplished as part of the assessment activities described earlier. His next basic questions logically center around the generic concern expressed as "If I choose to enter that training program and that occupational area, what is likely to happen to me?" That is, the student's assessment of educational objectives must, to be meaningful, have a personal meaning to the student expressed in terms of his expected training and occupational experiences. How will we help students answer this question?

Variety of approaches

In my opinion, no single model can be considered as ideal or as sufficient in and of itself. It will take a combination of approaches. Only a few such approaches can be briefly described here.

The one approach which first comes to my mind is, quite naturally, the one I am currently using in operating the Specialty Oriented Student Research Program. The basic elements of this program can be described very simply. We start with collecting from prospective students the most common questions they ask their counselors as they are trying to make vocational training decisions. We then collect answers to those questions from students enrolled in such training and those same students after they are on the job by use of very carefully constructed and administered data collection instruments. Taking those results, we make up a set of materials for each training program in each institution consisting of these answers presented in colorful, easy-to-read form. The format makes liberal use of white space, of basic graphs, of few words, and many cartoons. It is put together in the form of a vocational decision making format designed for individual study by students and for use by students and counselors in individual or small group counseling situations. We know this system works in terms of motivating students towards making educational-vocational decisions. There is no reason why it could not be used in connection with vocational training programs for the disadvantaged.

A second positive approach would be found in the use of actually enrolled students in the vocational assessment centers as described earlier. There, the prospective student could actually visit with at least one "real" student who is currently going through what that student is thinking about going through.

A third approach, of course, is to take prospective students from the vocational assessment center on visits to both the training institutions and to representative job locations that they might be likely to find upon completion of training. This approach is only as good as the preparatory activities preceding the visit and the followup activities that follow it.

The key difference, in my opinion, between the goals of helping students assess educational objectives and outreach activities can be stated in terms of a simple contrast. In outreach, the student is considering the question, "Why should I consider vocational training?" while, in this process, he is considering "Why should I consider *this* vocational training?" In asking this second question, it is essential that the student have more than one kind of vocational training to consider. The eventual decisions can be no better than the extent to which the student is allowed and assisted to explore a variety of possible alternatives available to him.

Short and long term goals

The long-run goal must be one of helping the student accent personal responsibility for the educational decisions he has made. While we must always keep that long-run goal in mind, we know that this represents a particular aspect of the value system that, at least initially, will have little appeal to many disadvantaged youth. For such youth, we must not be surprised if they fail to consider this long-run goal as important as we do. Yet, we will have failed these students and invited them to further personal failure if we fail to keep this goal in mind for ourselves.

In my opinion, we will have to be willing to allow students to develop more short-range goals initially and then hope they will acquire the longer range goals at a later time. There is no point trying to help a student reach farther than he sees is necessary or desirable for him to reach. I see no magic in pretending that we should know the nature or the dimensions of a particular student's educational objectives. This is something that properly should be unique for each student. Our task is to help each student make this kind of discovery for himself. It will require professional counseling to be sure. It will also require a variety of experiences that we must make available to these students. Finally, it will require that we come to feel as comfortable with temporary goals as do the students, that we operate under an assumption that all students have the right to try even when we believe their chances for success are slim, and that we keep firmly in mind the right of the student to change his mind.

In summary, what I am trying to say is that I would regard this stage of helping students establish educational objectives as only part of a continuing process—not a finite step in a series of never-to-be repeated steps. I would fully expect many of these students to enter training and then later return to this stage in their own career development. If we can keep this kind of perspective, I think we can make some progress towards helping each student assess his own educational objectives. This, after all, should be our goal.

RELATIONSHIPS OF ALL INSTRUCTIONAL STUDENT SERVICES

Martin Hamburger
Head, Division of Vocational Education
New York University

Having been in career development, research, teaching, guidance and counseling courses all the way from counsel interview, principles of guidance services, testing, and above all, vocational development, for a long time, I appreciate the flexibility of this conference.

While Dr. Hoyt and I take a different view on a number of things, we do agree on one thing. A lot of the things that we were doing for many years in the field of guidance and counseling in personnel and supportive services have had their day. And unless we're ready to abandon many outmoded definitions of what guidance is, and what counseling is, and what personnel service is, and what support service is, in order to think in new ways about what we are confronted with—new complications, new target groups, new programs, and new outcomes, support services won't make much sense. So, we have to start with the fact that there has been a widespread skepticism, suspicion, and mistrust about what guidance counseling has done these many years, I believe many counselors will agree, particularly on the part of people who are concerned with manpower and job training, vocational education, etc.

The image hasn't been too bright. We also know that I am talking here not only about the secondary school level, but the college or university. Pupil personnel services are what you have in high school and student personnel services are what you have in college. We change from a pupil to a student and that's about the difference.

Do we need supportive services?

Do we really need supportive services? Can we get along if we give pupils good instruction? Good curriculum? Good teachers?

The second question is not only do we need supportive services, but can we do our teaching and training without them? Shouldn't teachers, trainers and instructors really be able to conduct all these services?

The third question is if we do have these services, no matter how organized, who should do them? Should it be a specialist? Should it be the teacher? Or should it be people, regardless of their training and degrees, who "like people, like kids." Is that good enough? How much technical competency should there be? Would you want anybody to treat your kids for spinal meningitis, without training? Would you want the doctor to be someone who keeps up-to-date by reading the Readers' Digest medical section? I suggest, technically, he couldn't do it. Another question has never been more important than now; what role should the student play, not as a recipient of support services, but as a giver of services. How does he participate in the tutoring, remedial, counseling, and support services one to the other? That has been touched on hardly enough. I am not talking about student power, I am talking about student responsibility. We now know that many of the people who are our students are capable of giving a lot, and not the least is what we usually call support services. But the best kind of support of all is mutual support—support in which people learn together and can mutually reinforce each other.

While our question is an administrative question or a philosophical one, are we going to do any of these things or all of them? Who is going to help us coordinate? Who is going to connect the services we borrow or purchase elsewhere?

Vocational education is self-directing

The best way for people to learn is when, in the long run, they are self-directed, and self-teaching. I might say that the most important thing about the field of vocational, practical art is that, more than in any other academic field, people feel identity when they are self-learning. They are not only recipients, they are the ones who want to undertake the responsibility for the machine, for tools, for equipment. They are constantly being guided, being supervised, but they are doing it. Self-direction and student independence are not only important outcomes of all this but are the reason for all this. We have learned through some of the new programs and use of media that lots of people who have been dependent and passive and accepted what has happened to them are capable of taking control of what they must do a lot sooner than we thought was possible. We know that this is true of all the people. Unfortunately, I would say that a major challenge in the whole field of student services is actually a challenge to your attitude. Are you going to be paternal and supportive, or do you prefer the dependent's way of using the word "supportive." The word "supportive" has both of these possible meanings. Either of these meanings may be the one being used. We may mean to tell students what to do, how to do it, and to lay it out instead of making it possible for tolerance to be achieved, mistakes to be made, errors which cause difficulty to be encountered.

When I talk with laymen, educators, the professors, colleagues, and friends, about dealing with the problem, I ask them how the jet plane works! Forget it! You will never get an answer. Ask them how rockets or any of this stuff works! Any ten-year-old knows! Any ten-year-old knows a lot more about technical processes than any sophisticated educator. But he is not the specialist that you are! Because kids are too dim on understanding about the modern world and what makes things work and how they work and kids like this need to participate in this.

Hand-out is not the answer

Don't, for one minute, think that I enjoy giving up my independence. Yet, we are going to have to share our independence with them to some extent. Candidly, I don't want to give up a lot of the things that I am. But it's happening! Lots of people

don't want to give up to modern times and these young people. But here is what is all important! We have to get off the paternal issue. We are going to have to get off the hand-out ideas, the telling them how to do it, and patting them on the back. These are not important services. They inhibit independence of thought. But some of these ideas are not exactly found in guidance and counseling textbooks, and they are not documented. What about this notion about how much students should participate in every facet of education, in schools, and so on? For example, they want to pass on teachers' qualifications to teach. Four years ago they wouldn't have done that.

Think of this. There is no way for us to teach students if they don't want to learn. If they want to learn then they must be able to participate. If we want to encourage them to learn, then we must share this position of the governing which we have, and we want to learn how else we can learn, and so you have to say how you want to learn. I think that the very nature of success of the home economics, business education, vocational education, and industrial arts programs are because the students are doing something. Therefore, there is much more activity. I feel that unless you make a mistake you just don't learn. The youngster in a vocation class has a hundred times more chance to make a mistake than in any other classroom, and I deliberately let him make a mistake sometimes.

Support services as "export" services

The question really is, what are our objectives, and what are the ways to achieve them? Do we really need these services, in the first place? Of course, we need them more than ever for one basic, simple reason. Counseling has basically served a very select population. In fact, one of the most important functions of guidance and counseling in many schools was as support services, which were really export services to actually export the students, to get rid of them, to shove them somewhere. Guidance counselors served as what we call in sociological jargon 'agents of social control.' They are the ones who pull students where they are supposed to go. That is the role they play. Why do so many vocational people resent this? Because, on the one hand, counselors took vocational education students and sent them off to college. These were students the vocational educators thought of as "theirs." Yet, if counselors came across better people, labelled by some racial, neighborhood, or financial characteristic, they thought that even though the students might be intellectually better, the counselors were doing them a favor by throwing them somewhere else. Many guidance counselors prevented black kids from going into education school because they thought they were doing them a favor. These counselors didn't think they were racist. They thought they were being very nice, and realistic. They were trying to do what the system said should be done, and therefore they never opened any kinds of opportunity other than those that were already fixed or predetermined. That is why they got their reputation, because they weren't really free agents. They were people who were carrying out, I repeat again, a social control function, rather than an individual development function. That has been the basic argument in guidance counseling for years. And one of the reasons that when the National Defense Education Act was written back in 1957 or 1958, they gave so much weight to guidance counseling and other school support services is that what they wanted were good ways of identifying, selecting and channeling bright kids and not wasting time with others. And now guidance counselors are like sheep walking into this exhibit. I taught some of them. I tried to teach them otherwise. And I had better say it just the way it is happening because unless you talk about student support services meaningfully, with the idea behind it, you are going to get caught in some mechanical mumbo-jumbo by having somebody try to do this, and somebody try to do that, and you are not going to know what he is really trying to do.

The screening syndrome

We can't talk about support services without talking about objectives. When we can't get the kind of people who will look at these things this way, you know, we are in trouble. Part of the problem is that counselors have to do certain things and view vocational training in a certain way. By and large, the whole vocational education system was built on a premise that we had a pool of people, not too smart, not too intellectual, but not too poor to get background committal. Yet everybody knew what was right and they were right. They knew what student backgrounds were, they knew what student potential was, they knew what kind of tests they had had, therefore, you really didn't need much guidance in such settings. Yet people who came in, pre-selected to accept grants to have such vocational training programs, were bound to use these as a dumping ground. So what did vocational training educators do under those circumstances? They got so sick and tired of the dumping ground thing which was beginning to happen, that they went ahead and tried to make over these programs. And then they were over-selective. And what did they want a guidance counselor to do? They wanted the guidance counselors to screen the same way they did. Screen out the inadequates. "I want all of the kids with a minimum of this and a minimum of that and a minimum of the other." And so guidance counselors play the role of being the selectors and the hand-maidens of the college people, of the vocational people, of everybody, except of lots of kids who haven't background, don't have preparation, don't have motivation or understanding. The biggest challenge for any counselor is to work with a kid who is unready, uncooperative, and unprepared. We have tried to make it easy for ourselves. More educators want to have the cream. They want to have everybody ready to go, with the preparation and background. So, frequently, guidance counselors, instead of being supportive services, have been selective, screening, export. That is the role they play. They have not been prepared for playing the role of helping kids with learning deficiencies and difficulties, family problems, nutritional problems, a variety of mixed motives, conflicts, all of the things that go wrong when you try learning. And the kind of youngsters and student personnel workers who came into such situations weren't prepared to do this. They did not know how to do it. They knew testing when it was being used to select somebody, but they had not learned how to do testing to diagnose somebody's problems, and find out what he needed to learn about. What I say is this: if you are going to talk about programming, setting up systems, you have to understand the composition of the system particularly including people with such attitudes and such

backgrounds and such training. Guidance counselors often respond to philosophy and policy already established for them by high-level administrators. You might talk about the services you want to establish but the question is what can you do with the discretion that you have to generate on the problems of learning vehicles that you are going to encounter. Too often, educators throw up their hands. I am trying to establish, realistically, what kind of ventures, what kind of group do we have moving, for a starter? This is my whole concern.

It seems a simple fact that instead of helping counselors to use new instruments, and select, and then to give them an opportunity to try out, we keep trying to get them to use test and selection in the traditional way. I am saying that counselors use the same set of signals they have always used about screening people out. One of the most important instruments that has been developed is to provide a work sampling or exploratory probation as is used in certain services in rehabilitation. A true career selection is not made without emptying a period of time in which individuals can register and involve and take a rest. But you cannot tell in advance who can and cannot make use of this experience. This idea has been used sometimes in manpower programs and free vocational programs with mixed success. When every program tries to cream the best people for its program, it is inevitable that one day the people that creamed out are going to end up in all these vocational programs. In the exploratory experience, tenth-grade level students rotate through several vocational experiences, a block at a time, just to get the experience that ends on the equipment. And by evaluating what happened, this is much more significant testing than a test which establishes a lateral of such and such a score leading toward a program.

Students teaching students?

In Russia, one of the basic tenets of the whole guidance and counseling bureau is that every student who has learned well is expected to teach the others. That is part of the system. That is, student groups are organized so that they can give a talk to the fourth or fifth grade. All test scores are open. Students get together and talk about their impressions. This is one way of making democracy work there, if it ever does. Everybody knows what level of technical competency the Russians have achieved in a short time. One of the reasons is that if the youngsters are good in math they will talk to each other and say, "So-and-so has been doing well in math. We have got to get together with him and let him teach." This is not student tolerance, it is part of the educational system. This is, of course, one factor.

Counselors must change criteria

Do students make occupational choices on the basis of their experience in the shop or do they make choices on the basis of their relationship with the shop teacher? Time and time again I see that students go into a trade because the trade teacher was a great guy and they liked him and he had a pleasant image. One of the reasons the system doesn't work properly is that we are not using the kinds of techniques and resources to make it work, not because it is not a good idea. It is not being supported by the kind of diagnosis we need. Counselors should talk to these students about what choices mean. They don't explore enough. Choice without exploration is useless. Guidance services are sometimes put together to take care of one problem but they should be organized into a system to handle other things too. Counselors are never expected to learn anything about skills training or visit an industrial establishment, or a shop, or know anything about tools, equipment, machinery, or modern psychology. They get by by reading a book on classification of occupations. So what do you expect of certified counselors like that? That doesn't mean that they are useless. I am saying that within certification, we have got to include things which are going to address themselves to this problem of firsthand knowledge. Counselors learn all about scholarships for colleges, yet I am sure half the counselors wouldn't know a weight if they saw one. They need to understand the experiences that come before the education. They know all about chemistry, history, and English, but when they try to talk to students who have had extraordinary experiences they can't help the students work through and understand what they have to understand. You may say, "We can't change the requirements. These are not mutually exclusive things." There is plenty that you can do. You can talk about these things with the people who establish requirements and recommendations. You can play a role in your end of the work. Instead of beginning to feel that counselors won't do anything, remember that they are doing what the society told them to do. I am saying, help them to understand better what they should be doing. Don't just say to the counselors, "You don't appreciate us. You send us the worst cases." The manpower pool is a competitive pool. Any counselor confronted with parents of a youngster who is clearly a very smart youngster and meets all the requirements to go to engineering school, is not going to suggest at this point that he be a diemaker. Am I right about that? They are going to suggest engineering school, obviously. Yet there is much more to being a diemaker than appears on paper.

I am not talking about scraping the barrel. There are plenty of competent students. It is just that they may not be ready to move on to the assembly line for the equipment. And counselors haven't been used to making the experiences available to do it. Teachers in every field of education tell them all the time that instead of helping develop the youngsters, competition says we want the students for employment, but only the upper 25, 30 or 35 percent. Increasingly, our challenge will be the lower 25 percent, the lower 30 percent. That's the future of technical industrial training in this country for a long time to come and it is to that we must address ourselves. We have got to learn to work with people who are low by present criteria, not in terms of their potential.

Definitions are cloudy

I would like to make several points about the nature of what supportive services are, so that we can look at traditional situations we know exist, and make some distinctions and comments. One is what I would call the personnel services and the guidance services. Let me be arbitrary in distinguishing them. Personnel services concern the needs of people for food, money,

transportation, health, and other services as people. That is, they are not individualized. These services are given individually but are needed in order to exist. This is a supply function. Many supportive services are in this category, not concerned with other formalities or services, when we focus our individual choices, individual development, individual learning. Let's make that distinction. Personnel services are needed where a certain group of people get together. Health services are provided in every school system, not because logic warrants them. We have health services everywhere not because we have people who have bad teeth, but primarily because we have concern for the public health point of view about the dangers of contagious disease. When we realized, for example, what large numbers of immigrants came into the cities from foreign countries, that many of them had poor nutrition and other health problems which required special services, we began to intervene accurately to make sure that youngsters did have these services. For example, in many school systems, health services used to consist almost entirely of what used to be known as "delousing" children in the classroom. There wasn't a slow school in a big city where a lesson wasn't shown in which a child was taken first into the classroom, his hair was washed and combed and he was literally deloused. As I was establishing my own school, I know where they first did it. But at that time, that was an extension of health services, to help do away with contagious diseases.

We knew that children should have food. We extended cafeteria services. We began to do lots and lots of things that could help people. We did it because without these things people could not learn, could not function.

One of the reasons that guidance people got farther from their original intent was that increasingly they functioned in situations which did not require personnel services; they became too concerned with only the psychological choices that could be made. They brought light to the fact that before you could make choices and be motivated and be cooperative, you had to take care of a lot of other things for the students.

In some schools, the priority has to be on personnel service. You cannot begin to do guidance by my definition unless these other things are taken care of. We have got to understand that this is what is most appropriate for us and there is no formula!

Be persistent

Instead of criticizing the counselor, be persistent with him, and keep at it. Let me share briefly an interesting example from France. I have seen it also in Israel. This person, or counselor, is called an "educator." And his job, from the beginning of the day, is to go around to every shop class while shop instruction is going on and be a combination of overviewer and troubleshooter, identifying difficulties and improvement by inches. They are doing their counseling in the best sense of outreach. They are going to where the training is going on and staying with it. That's their job. Then they talk with the teacher about so-and-so's math being very bad and then they begin to set some experiences up. The same type of thing as when you have large institutions and someone is in real trouble and has an emotional problem, so can't pass a test of some kind. This is an expensive approach which means that the counselor never sits in his office. This is what I mean when I talk about the distinction between student personnel services and personnel support services. If these things are done at all they are negligible. We can all have a program on how many examinations were taken, we can tell about a lot of things we have done which are negligible. Unfortunately, we haven't learned to really evaluate and to make accountable a real guidance program. What we really talk about is, "averages have improved." We talk about so-and-so has become more cooperative. Educators who want only cooperative and well-motivated students really will find that increasingly their mission isn't necessary. Cooperative and well-motivated students will be in the front of the teaching machine. They don't need teachers, they don't need counselors, they don't need support services.

Put students to work

I would like to share briefly a word about the use of a counselor in Detroit. This counselor abandoned any kind of counseling with students herself. Instead she spent all of her time supervising peer leaders; that is, students who work with other students. Some of them were inundated by teachers. Some of them were self-volunteers. What I am saying is when it comes to discipline, it is basically administered by students and wealth. If you put students to work disciplining, they will be a lot more effective than you.

Hopefully, you have begun to think through the "why" of support services—who should do them, why we do them, and what we expect from them. And I am saying that we have got to really do some things that I hope the rest of this conference will examine in greater detail in your own capacity.

I am concerned, not about the technicalities of certification of counselors in vocational education, but about what I know to be the basic change that has to be made in the thinking about how we really discover and develop potential and how we can do this best.

OCCUPATIONAL EDUCATION—INNOVATIONS AND OLD NOTIONS

Theodore J. Cote
Chairman
Department of Industrial Education
Temple University

It is indeed fortunate that metropolitan area youth destined to earn their living in the mid-level occupations have so many resources available to them. They have ready facilities to assist them in learning about occupations, choosing one, learning the necessary skills and knowledges, being placed in their first job, improving themselves in their chosen occupation, and even changing occupations if they do not gain the expected satisfactions. All large cities are able to boast of comprehensive programs of guidance, practical arts, vocational education, and manpower training and employment services.

Innovation in vocational schools

It is again fortunate that each of these programs is currently characterized by increasing progress and widespread innovation. In vocational education, for example, it was not too long ago that the major basis for the expansion of trade and industrial education offerings at the local level was the increased availability of space which resulted from the conversion of the heating system in schools around the country from coal to oil. What else could the coal bins in the basement be used for? In recent years, the program has been expanded by the "powers that be" because students need it and we see attractive, efficient area vocational schools, springing up in communities all over the country. The "Matthew, Mark, Luke and John set-up" with the inevitable Drafting, Electricity, Machine, and Woodshops have given way to programs involving a galaxy of as many as thirty trades in one program, and the offerings themselves, formerly restricted to the nuts-and-bolts trades, have broadened to include such sophisticated fields as medical and computer technology.

In the practical arts, we can all recall when about the only difference between many programs of industrial arts and vocational-industrial education was the name painted on the door of the shop. The automotive trades of one became the power mechanics of the other; the machine or sheet metal shop appeared as general metals, and printing was presented as graphic arts. The teachers, perhaps, understood the nuances implicit in the different objectives of the two programs, but to the average youngster in either, he was studying "shop" and school superintendents and even principals were usually guilty of the same over-simplification. Decades of slow evolution in industrial arts produced only the "general shop" as being unique to its own field.

Recently, however, the literature is rife with references to efforts to portray industrial arts in its true form and perspective with unique purposes and objectives. The Galaxy Plan, the Industriology program, Functions of Industry, the American Industry Plan are all illustrative of contemporary innovation in the field. These approaches view industry in new and different ways and give the field real reason for standing on its own two feet.

Programs have made progress

Less than ten years ago, adults, school dropouts or even high school graduates who happened to have left the school without taking advantage of the vocational education program found "slim pickings" in terms of programs in which they could learn a new skilled occupation. Private schools were expensive and available apprenticeships were few and far between. Public vocational education could not help them since the program for those out of school was restricted to students who were already in a skilled trade and wanted to improve their knowledge and skills in *that* trade. Results of this ridiculous situation are clear in the findings of a 1963 Labor Department study which indicated that of all workers in the labor force, only 3 in 10 at that time had learned their occupations through a formal program of any kind.

Much progress has been made in correcting this condition, again through the efforts of the manpower programs of the Department of Labor. Not only can the average adult and out-of-school youth learn a trade, but innovative programs now exist to meet myriads of special needs. In addition to the well-known JOBS and CEP programs, such new programs as SER (Service, Employment, Redevelopment) which focuses its attention to the problems of the Spanish-speaking minority and PRIDE here in Washington which is concerned with the rehabilitation on gang youth through employment training are making great strides in the direction of making opportunities available to all who wish to learn how to work.

Nor is the field of guidance and counseling standing still. New things are happening with this group also with important implications for our area of concern. In the past, much of the counselor's time was spent helping students choose colleges with this and that set of characteristics. A computer service is now available which provides the student with a list of colleges fitting any pattern of characteristics imaginable. Hopefully, the time saved will be spent on vocational counseling which itself has also been involved in considerable innovation. Research at Harvard, Penn State, and Stanford have produced several different models of computer systems which take student ability and interest characteristics as input and produce matching video, audio and written outputs relevant to several possible occupational opportunities tailored to the individual student.

It must be admitted that new and exciting things are happening on all fronts where concern is expressed over preparation for the world of work and there is ample cause for encouragement. On the other hand, the National Advisory Council on Vocational Education soberly reminds us that in the 80's, more than 8 out of 10 of the jobs that compose our economy will

require less than a college preparation and that only 2 out of 10 students in the current pool in the public schools from which these workers will come are preparing for any occupation at all. Further, despite the broad expansion of work preparation programs of all types since 1961 and despite the fact that the unemployment rate for the labor force as a whole dropped by almost one half between 1961 and 1968, the plight of the job-seeking teenager has actually gotten worse during the same period. In 1961 the unemployment rate was only 2 and one-half times greater than for the labor force as a whole. By 1968 it had grown to 3½ times as great and the difference for minority youth was even greater. Clearly the major overriding problem area for occupational educators in the 70's is and will be that of providing for the vocational needs of youth.

On reflecting upon the above statistics, one is compelled to ask, "how can this be?" So much has been done, how can this be? There are obviously many answers to this question. It is my own bias, however, that a major answer lies in the strongly-held destructive notions held by the very groups that are most concerned and even involved in the education of youth. For the next few minutes, I would like to examine some of these notions in terms of their implications for the problem with which we are all concerned.

Vocational Education is the only answer

Of all American mores, one of the most puzzling is the notion that some mystical quality attaches itself to being accidentally first in a given situation. There is, thus, a godlike aura that apparently surrounds descendants of the first families of America. They may be paranoids or chronic alcoholics but this fails to diminish the honor surrounding the fact that they were begat by a descendant of someone who was running away from something or someone in England and happened to land in the New World. The same phenomenon is also observed in such institutions as education. It is the only way of explaining the notion held by many vocational educators that their field is somehow superior to MDT, OIC or other so-regarded immigrant programs because it happened to be the pioneer that first appeared on the scene. Because of this notion, many worthwhile programs which have since proven themselves had greater than usual growing pains in their early years. Vocational educators holding this bias have to realize that the challenge which faces us is bigger than all of us and that *all* resources *regardless* of their setting or point of origin must be exploited to the fullest if we are to meet that challenge. They must further recognize and accept the promise that if vocational education *is* superior it should be able to be demonstrated and not merely inferred.

Industrial Arts–Vocational Education–Never the Twain Shall Meet

Despite the unfortunate similarity of many industrial arts and vocational industrial programs and the fact that they generally accept the fact that each is a subgroup under the broader field of "industrial education," the two disciplines are still separated by a philosophical chasm created by the notion that one is "general" education and the other "vocational" and never the twain shall meet. This bias under the guise of maintaining respective individual character has tended to inhibit cooperative activities. It is this notion that has limited the potential of industrial arts to perform guidance or prevocational education functions which have long been accepted by leaders, from Warner on, as being not only legal but desirable objectives of the field. Writing in the Winter, 1970, issue of the NAITTE Journal, Glazener, a spokesman for this field, recognizes that despite the crying need for prevocational experiences, as noted in current legislation, "many disagree" that it should be a function of industrial arts.

It is this notion, also, that stands in the way of the possibility that industrial arts might provide preparatory experiences for youth in selected semi-skilled occupational fields, an area in which vocational education has even yet failed to scratch the surface. If we are to make vocational preparation available to all who need it, we must do all we can to dispel for all time the notion of "general versus vocational" education. An extension of this notion is also applicable to the field of guidance.

Vocational -vs- Educational Counseling

A generally accepted function of guidance is educational-vocational planning. This would imply that "educational" and "vocational" are related but discrete areas of counseling. They do, in fact, tend to be treated in this way in actual practice. For the able student there is "educational" counseling because his immediate goal is further education and he needs assistance in achieving it. For the less able student there is "vocational" counseling because his immediate goal is a vocation and he needs assistance in achieving it. This notion ignores the important point in the first case that further education is or should be "vocation" oriented and in the second that any vocation involves prerequisite "education." As a result, the able student tends to be short-changed in terms of "vocational" counseling and the less able in terms of "educational" counseling. Worse still, it is this notion more than any other that has reduced the prestige of vocational counseling to an alarmingly low point in a profession of which it was originally the very foundation.

Under the influence of this notion, college has tended to become an end in itself rather than a means to something else. As evidence of this, a study a few years back by Educational Testing Service of Princeton, New Jersey, of 13,000 college students revealed that only one out of four students had even the vaguest idea of why he was in college. President Brewster of Yale has gone so far as to attribute much of the current student unrest that plagues our nation's campuses to this very lack of real purposes. This may or may not be true, but we do know that at least one-half of those who enter college manage to leave before they graduate. One wonders if this number would be changed if three out of four students knew why they were there in the first place instead of three out of four not knowing why they were there.

Before any great change can be expected in the ability of all youth to receive any real assistance in determining their optimum role in the world of work, the notion that "educational" and "vocational" counseling are somehow different

must be dispelled. Counselors must recognize that *all* students require vocational counseling to assist them in working toward an occupational goal, be it at the professional or semi-skilled level. The identification of a program and/or institution through which the occupation can be learned is part and parcel of the same package. The quality of vocational counseling will improve to the degree that it is recognized it is necessary for all youth.

High School—too soon to choose?

In the mid-fifties an economist at Columbia University wrote a book that has made a lasting, if unfortunate, imprint on the guidance profession as well as a considerable portion of the total education community itself. It was called *Occupational Choice—An Approach to a Theory*. Based on the results of a study of a few dozen atypical students in New York City it gave rise to the widely held notion that youth are not ready to make an intelligent choice of an occupation until well after they leave high school. The implications of this notion for school-based programs of vocational education need only be imagined Many questions can be raised regarding the research which has produced this notion, as in fact there have been. Gribbons and Lohnes, reporting on a five-year longitudinal study in this area, conclude that current career development theory may be underestimating the vocational maturity of school-age youth. For our purposes, however, the question of the ability of a high school youngster to make a tentative occupational choice is not nearly so important as the consequences of his *not* making one.

The youngster who does not choose the college course in high school usually has, as alternatives, the choice of a vocational or general course. The first involves an occupational choice in apparent contradiction to current vocational development theory and the latter requires no such choice, and therefore, is compatible with that theory. For a period of over thirty years, a follow-up study was made of graduates of vocational programs in a thirteen-state area. In 1963, the results indicated that only 2.4% of 23,000 graduates were unemployed in October of the year in which they graduated. To be sure, some were not employed in the occupation for which they were prepared, but better than 97 out of a hundred were working in some occupation. In the same year, by contrast, 15 out of 100 of their out-of-school age group were without jobs. While the two groups are not directly comparable, the evidence suggests that the average out-of-school 18-year-old was five times as likely to be unemployed as the vocational graduate and the average 18-year-old has taken other than a vocational course in high school.

Conant has addressed himself to occupational choice in high school in another way. In the *American High School Today*, he makes the statement, "To my mind it is desirable for as many boys and girls in high school as possible to have an ultimate vocational goal. It may well be that many of them will change their minds before the high school course is over or in later years. But if a student thinks that what he or she is studying in the school is likely to have significance in later life, the studying in question takes on a new importance."

The point is obvious. Counselors should continue to keep abreast of career development theory and apply it judiciously in their work but they must strongly resist the impulse to use it as an excuse for forgetting the fact that youngsters must be prepared to somehow fill that time void which begins when they leave school and ends when they are in a position to make a so-called "valid" occupational choice.

IQ and Occupational Level

Despite the variety of test data we have available on youth in our schools, the most widely known and, I surmise, used or abused is the IQ. By the time a youngster reaches the ninth grade he has already been earmarked as being either "college material" or not on the basis of this magic number. To the degree that college prepares a person for higher level occupational activity, we are thereby assuming that the IQ is a valid predictor of occupational level and that, if one's quotient is above a given point, his optimum occupational placement is in a type of work which requires a college education. In fact, I strongly suspect that in too many instances we feel that, for such youth, it is a cardinal sin to consider any type of work which does not.

In actual fact, IQ is not a very good indicator of occupational level. For example, studies made of the scores of 88,000 servicemen on the AGCT show that while the majority of accountants scored above 114, so did 10% of the lumberjacks whose median scores were lowest of all occupational groups. Overlap of IQ by occupational levels becomes even more pronounced toward the center of the distribution where most occupations cluster.

The point to be made is that the notion that a person with an IQ of 110 must, on this basis, be "guided" toward professional work and away from middle level occupations is a dangerous one, indeed, and one that constitutes a major block to sound vocational programs in our schools.

There are many more notions held by different groups of educators and others that are having a profound effect on the success or lack of it of contemporary programs of occupational education. I have commented on but a few of the more important ones. I would like to suggest that if we who are joined in the mutual goal of providing for the vocational needs of all youth are really interested in what we purport to be doing, we will not permit an opportunity to pass by to destroy or at least weaken these notions in the minds of the people with whom we deal. If it were possible to create a graphic image in their mind's eye of the unbelieving, betrayed expressions that mar the youthful faces of the nearly 2.5 million youngsters in 1975 who will have found neither themselves nor jobs unless something is done now, educators, counselors, and all concerned people would realize that changing that picture is worth the changing of an ocean of notions.

INFORMATION SYSTEMS

Cleveland L. Dennard
President, Washington Technical Institute

You have spent some time now looking at the kind of supportive services needed in vocational education. You have been looking at the whole that has been the spectrum of supportive services and some planning techniques that are used for identifying programs. Additionally, you have had an opportunity to review with Marvin Feldman some of the dynamics of career education or of career development. You have talked with Ken Hoyt about "Establishing Educational Objectives," and about planning techniques with Bob McKee. Ken Hoyt's talk was about some of the real needs for setting educational objectives for personnel working in this area. You have had a chance to go through a few bull sessions, and get it right for yourselves. My concern is to focus rather precisely on the information needs. In the process of discussing programs, parameters, program designs, philosophic rationales, and things of that nature, it is very good to get common agreement on what information is needed to manage environment. The moment that it is said that one needs a computer to manage information, or that an administrator needs to birddog the operation, then frequently we lose sight of what information we are specifically trying to manage and what is the flow process?

Application of knowledge to problems

We have been describing something that is very old in vocational education. It is called the problem identification process, and the problem solving process. Interestingly enough, from a long time back to the present time, Skinner and Carl Rogers and all of the psychologists, whether they are behavioral or Gestalt psychologists, describe different ways of learning that also represent institutional models. In the process we see that people learn through generalizations, through analysis, through inference, through discrimination, through synthesis. We say, of course, that quad and quan in chemistry is essentially a course in synthesis. And then they say we learn through problem-solving. And they write books on all of those items, except problem-solving. Charles Prosser, to whom we sometimes refer as the modern-day father of vocational education, described problem-solving as the vocational-educational process.

The application of knowledge, then, is the concept identified with a problem that has more elements to it than would be contained in a classroom with one teacher and three men afloat. So, if we took job analysis and substituted job problem analysis, or substituted a problem of systems analysis, or substituted what we say in psychology is the gestalt, we would translate the process of identifying a problem and sub-dividing it into its parts, into a different way of thinking of scientific matter. Everyone does this in the ninth grade the first time he writes up an experiment in the science classroom.

What we are trying to do is look at poles on the assumption that the rational thought has always been that one should learn from the what to the what, the known to the unknown. Another way we state that is from the simple to the complex. This is reversing the process, starting with the whole and backing into the parts. To deal with the kind of issue that you are talking about, you have to start with the whole. Otherwise, the course becomes more important than the curriculum. The teacher becomes more important than the school. It is for that reason, I think, that with the Smith-Hughes Act of 1917, nobody would have agreed that any money would have been allocated for support services. Ag wouldn't give any, T & I wouldn't give any. It was written into the Smith-Hughes Act of 1917 that money shall be provided for support services drawn from each of the service agencies, provided somebody administers the cooperation, so everybody co's and nobody operates. The end result was no money until 1963. So, if we said that the problem here is one of outlining in vocational education, if one identified the problem, we must set up a socio-economic objective, or state the problem objectively. And then we need to translate that objective into operational terms, and then analyze that problem objective of doing whatever we set as our objective.

Career development, generalization to specifics

Let's take career development in Watusi, Minnesota. This must run from analysis into synthesis of our program for a vocational education career development system. That has to feed into something else, which would be the resources requirements to pull this off. How many men, how many man hours, how many dollars, how many square feet of floor space, and when do you want to do it? This way we get some kind of flow of an overview, and somewhere in this analysis, we need to think about trading off with those persons who are already doing some of this operation, so that we don't rediscover America all by ourselves. In addition, we come back to the socio-economic analysis and translate who is to be served, who needs the service, what industries, what businesses, what does the standard industrial classification say, what are attrition rates in industry and business, how many people are being employed, how many do they think they will need for the next four or five years, what are the educational requirements, what are the skill requirements? This is translation into problem specifics. The problem can be identified. Everything else becomes how do you solve it? If this isn't clearly stated, then everything else slips off the hook all the way through. It is interesting that all graduate schools require all students to use this method to write a thesis but they never tell them that this is their operational tool for the rest of their lives—that this is the only way to solve putting a man on the moon, by looking at all the pieces and the items.

What kind of data do we need, then? There is precise information that everyone has to have at the time that they are carrying out certain functions. We are discussing now the vocational education system. Let's start with student information. What do we have to do for all of our students? For want of a better word, you have to be admitted, either from the junior high school, from the senior high school, from an outside program, or from somewhere; whether or not you do testing first, you need the data. It goes into the system. Let's state this in two sets of terms. What you call admissions in an educational institution is called outreach in a manpower program. We have to go and get. And the student has to be registered in some form, we need certain test data, and we also need student evaluation. How do you measure progress? You need some form of grading system. Now when we have these three sets of data, we need an additional one, more of which we call follow up. Has the student done what he has said he was going to do? Has the institution done what it said it was going to do as a result of the statement of his problem? It seems to me that these are the five basic components of an information system. And someone is supposed to have information on the student all the way through the system.

Now, what kind of counseling ought to take place, and where and when does it occur? After your test, before or after you admit, where do assessment, counseling, and advising fall? What kind of data do we need? Once you move into the public school system, level 7, 8, 9, 10 or 10, 11, 12 or post-secondary 13, 14, there are certain functions that must be carried on by the staff of the institution. The question is, what do we now identify concerning the student? We are not now discussing who administers, or how you administer, we are simply trying to look at the information system to assure that the relevant elements have been included in the base from which management decisions can be made.

What kind of tool will information be?

Will the information keep a personnel staff advised as to which curriculum the student should enroll in? Is it to recommend placement, or non-placement in the curriculum, or placement on the job? Is it to make a decision as to whether the student takes an in-school or a co-op course, or an OJT arrangement? Each of these would tend to flow into a job analysis process. Do you remember how we used to state type of job and analyze the type of job into the operations, analyze the operations into the steps and the key points, and then decide on the related information that was needed at the time that the individual was performing that type of job?

What do we want to know about admissions? What do we want to know about the student to let him into a program? How does he even know that we have anything here that he might be able to profit from? Who decides this? Where is he coming from? We said earlier that we have a vocational education system for career development that we are developing. Look at the socio-economic characteristics of Watusi, Minnesota with a population of 1,000,000 people. We have analyzed that community in terms of all the kinds of industries that it has, and we have done a systems analysis of how many jobs are now filled, what the employment rate is, what the retirement rate is, and what the job distribution is going to be for the next five years. Based on that, we say that there are x number of opportunities available. We have translated that into an educational system and we have all kinds of shops and laboratories and classrooms paid for by the citizens. Now we need to know what kind of information system we need to be able to get a student into this system and to get one of those jobs. At the time we admit him, what do we want to know about him? At what level shall we start this vocational education career development system? Shall we define it more specifically? Is this system a separate career development center or is it a part of a double-purpose high school? What do we want to make it? We are assuming that this is a comprehensive secondary school that has a vocational education career development component, which means that the student can go through it, come back into it, and go out in several directions. Options are built into it.

Now, let us just restrict this student to graphics, printing, publishing, technical illustrating, architectural machine design, the whole spectrum of graphics. Shall we restrict it more so that everybody is talking about the same kind of program through which the students can pass? We are now assuming that this kind of curriculum is valid, and that we mean what we say when we say that this is what the students should be able to do as a result of having gone through this experience. What we don't want to wind up doing is socially massaging this student, re-doing his background, changing his diet, and all of these other kinds of things, if we are, in fact, describing the educational environment through which he must move and what we are to do in the process. So I don't want the cafeteria program to impinge on this analysis, and I don't want some of the other kinds of programs to impinge on it. If we can delineate what the educational environment is at the admissions level, then we can say we need feedback on the student's previous educational experiences. We don't care whether the experience was gained in a co-op environment or a work experience, or somewhere else. We do need to know what he has done over the long haul. What has been his educational experience, kindergarten through 6 of wherever he was. How do we get that? We can use terms like student records or permanent record but what are we particularly interested in, in those records? We want to know the courses that he took, progress, attendance, attitude, behavioral pattern—what else do we want to know? If he has a tendency for uptightness, does he behave on it? It is important to know this.

Why does the system respond or not?

Now we haven't discussed who went out to inform him, or anything of that nature. We are simply saying that as a supportive service for that curriculum, these are the things that have to be done in order to get a student in, to get a student through, and to follow the student afterwards. That is, what is the gestalt of the institution in order to be able to respond to whatever his needs are? It is validating the capability of an educational enterprise. The public school system

and the colleges are often accused of being unable to respond. You know better. I know better. But it is important for us to know what it is about the system that doesn't respond? Is it packed with people with control over certain functions? If the analysis of the functions can be delayed, then we can see what it is we have or do not have that makes it impossible for us to carry out certain roles. So if we have this information then we can make certain kinds of judgments at the point that the student comes in.

Shall we assume now that he has come to us or that one of our staff members has gone out to communicate with him? Now he has arrived! We have before us his feedback on his previous educational experience, of which 80 percent was in school and 20 percent was out of school. Without doing a case study on the 20 percent or the 80 percent, at least this is before us. Mission objective: we want to see him through to a job. What else do we need to know?

Shall we assume that his presence here says that he has a measure of interests? Is he here because he wants to play football or basketball, or there is a compulsory school law that says he must be here? Is it a penal institution, or what shall we assume? I am just trying to pin down the parameter, so that we know just exactly what needs to be broken out into data base, because this becomes our operating methodology in dealing with each individual student with relation to admissions.

Somebody, even the counselor, if that is the admissions office, needs to know what goes in that graphic arts department, to determine 1) what does a person do, and, 2) what should he know at the time that he comes, and what should he know at the time he leaves? What do *we* need to know just to get him into the classroom? I would call this the curricula experience. What experiences must this student go through to satisfy the requirements of graduation? Some states have a program of study and they publish it as one document, statewide. Some cities and schools have the same thing. The question is, does the member of the support staff have the same information that the instructor has at the time that he is ready now to provide some of these services to the student? What is the curriculum? What, in fact, occurs in those classrooms and shops or laboratories? We need to know the curriculum. Is that just the outline? Is it the learning experiences treated in course terms on campus? What else should be known in addition to the curriculum? I think the preciseness of the curriculum as it relates to occupational education has its pay-off in its delivering of what it is designed to do.

How much better off or worse would this student be if in 1973 the counselor said to him, "you have now been through a cluster of eight identifiable jobs in which you qualify for any one."? With certain kinds of experiences, you really could now look forward to supervising this kind of structure. This raises the student's aspirational level, and his perceptions of himself. However, when he is locked into DOT-21-11, he perceives himself only at that level, so we are just trying to lay out the possibility of coming back then and saying, "You can't leave in '71 because you are not going to cover xyz until '72, and if you get out before '73, then you have cut yourself off without certain kinds of growth that continuing education would still provide for you in a system."

Let's generate a little more data. As soon as the curriculum experiences are validated, can we classify any of these experiences by DOT? That brings us to job classification. What else do we need to have at our disposal? What category of information do we need? By curriculum here we mean "required for graphics." That includes English, math, everything that is required as an educational experience, whether co-op or in the classroom. We are assuming that someone must make certain decisions about the student being included. Is that one of the things that has to be done for students? Interview? Are most students contacted by someone? Do they just get a seat ticket and show up? What supportive services are provided and at what point? I am now simply trying to identify rather than manage. At the point of admissions, what precise information is needed? If we have a transcript of his previous experience, if we have at our disposal the curriculum that is being offered, if we are now at the point of the interview, if some counseling has to be provided in order to make a go or no-go decision, we are only dealing with one point in time; when to get through admissions. Beyond that point our student is a statistic. We can tally him off. One additional seat is filled.

One other kind of thing is done. We must translate this into an action flow which shows, as a point-in-time consideration, that the student is enrolled here, he is admitted, he is counseled, tested, etc. and has moved to the next block. I am now simply looking at the information system, the management process. Each of these blocks represents a sheet of paper or form, and it is not until we have these kinds of forms that we can be consistent in our behavior in providing services. If you have a computer system, your programmer would know that these print-outs would have to occur at some point in time, so that we are, in fact, delineating the design for an information reporting system on the same information.

Identifying problems to provide solutions

In the proportion that we can identify problems on the front end, then certain services can be provided early enough to spare the student some trauma that may cause him to leave before accomplishing his objective, a trauma caused only because the institution was not designed to accommodate his needs at the appropriate point in time. At the time that we are ready for the interview, if we have some data on how he performed previously, regularity of attendance, achievement patterns, pugnaciousness, and we know the curriculum also, then we are really ready to say honestly to him "based on what you have been doing, it is not reasonable to assume that you are going to have reasonable success in this curriculum," or to say "reflecting on your interest in....., it seems to be worth a try for you to come through, and although this program was designed to prepare a person to work in a cluster of seven, eight or ten jobs, it is absolutely certain that you can develop three of these within 90 days. If you don't want to stay in school, you can just get your hat, but before you leave, I know Mr. John Doe. He will start you co-oping. If you get down to the difference

between a hair brush and a paint brush, you might catch fire in this curriculum." This is so terribly important in the urban environment where the minority student has to deal with problems which says he is not quite first-class in the total social order. With curriculum that he is guaranteed to fail in to start with, he becomes quite first-class in academic circles. So he closes his mind from point A, because he assumes the way in which he is dealt with at that point is a closed issue. Perceptually, in proportion that there is a common body of information that support staff has at this point in time, we can arrest the normal trauma that tends to accrue on the initial confrontation, about his ability to develop a feedback pattern in '73 that someone could feel free to recommend.

Communication at operational level

There are places where people don't speak to each other. When we do a job analysis, we suddenly find that at the operational level, that if the counselors and teachers don't talk, that if the administrator doesn't design operations so that inter-facing takes place within staff, then a system does not exist. Rather, what obtains is, as Dr. Feldman was saying the other day, a group of separate administrative entities operating under the same umbrella with a single head. None knows what the other is doing, yet there is a point in time when all students flow in, and this, of course, is why it is so critical to focus on the kind of supportive services that are essential. What Bob McKee was saying on Monday afternoon was that if we develop skill in using a planning tool, the tool is applicable for looking at the total of the city, or it is applicable for analyzing the curriculum, or analyzing these services. What we are really saying is that there is a way of looking at problem identification and problem solution that gives us a handle on what has to be done, by when, how much, for whom, with whom, and what were the results. You can take three different attacks. You can take critical incidents alone, and develop a curriculum, get an advisory group, a group of DOT persons, or you can sit down with a group of educators. It depends on what we want to do here. It seems to me we try to provide some kind of diagnostic testing on the front end, for placement beyond admissions, but not as a condition of admissions. There has been such a terrible misuse of these data, during the last 12 or 15 years, that there is a great deal of docile behavior about testing. But as a predictor in using tests such as Flannigan Aptitude Classification Tests—does he have mechanical aptitude, electrical appliance aptitude—that's a different kind of objective measurement for "is the student interested, does he have perceptual (or conceptual) sensitivity, can he see a harbor, and then draw it." You need some way of at least reviewing this. It would be well if it was picked up at the beginning, but invariably it is an exercise that occurs after the student has finished. Now when he is counseling, if we have this kind of information, then counseling can take place, in every instance. We can explode counseling. What shall we do at the time that we are counseling? We can take interviewing and say what shall we cover in the interview. We can take previous educational record and analyze it. What shall we do then? We can take the curriculum and break it down, related information versus performance information.

We shift from admissions now to registration. For all practical purposes, registration can be covered under the heading of coding. Every course has a number, every teacher has a number, every room has a number, every floor has a number, every department has a number, so we begin to put two-digit numbers or three-digit numbers or five-digit numbers and come out with a schedule. We didn't stop to say that this is a 2200-student school of which enrollment limits provide 113 in records. A decision to admit has to be made here. Is this a value judgment on the part of the person, or is this an analysis kind of decision that says that this is what is required in this regard in proportion that supportive staff has this kind of information to make alternative decisions. This would assume that the input information was available from other members of the staff as to what they recognize would have to be done above and beyond the curriculum to assure reasonable success opportunities for our student as he goes through. We find that this kind of working tool gives us a better handle on how to deal with our information and our own behavior rather than placing the total responsibility out of your own book. Otherwise the student couldn't make it through. He couldn't even make it in. I think that one of the problems we have been confronted with in large metropolitan areas occurs when the student presents himself before we have our capability identified.

This is a technical need growing out of typical planning models, that permits us to get a handle on the kinds of data that has to be included in the student information system. Then once it is out, we can validate for ourselves "How shall we use it?" and "When shall we use it?"

SUPPORTIVE SERVICES, WTI

Anthony Campbell
Dean of Student Affairs
Washington Technical Institute

I think there is no job in a higher educational institution or secondary institution more perilous and more fraught with potential disaster or the possibility of greater success and satisfaction than being on the action line with students. Here, at Washington Technical Institute, we have perhaps more bodies per square inch working in student services than any institution like it in the country. In most of the environment that you come out of, this would probably mean a huge expansion of your staff, and perhaps you would regard that as a windfall. Actually we find very interesting enigmas cropping up even with our fairly lush staffing arrangement. I will name three enigmas and then I will introduce our panel, and we will talk a little bit about how we mean to handle our participation today.

Three enigmas

First of all, the first enigma. There seems to be absolutely no nexus between formal training and competence in dealing with the students whom we have to deal with in this vocational environment. There is almost no relationship whatsoever between Masters, Baccalaureates, and PhDs in the competence required to get the job done with students.

Two, the figures on nutrition and the figures relative to student success have not been appreciably dented simply by having bodies in relationship to numbers of students. The old myth that if we have a smaller classroom or have more counselors provided per bodies that all kinds of dramatic things will happen seems not to be born out at the present time in the history of Washington Tech.

Three, this may explain the other two. It is virtually impossible to find any institution in higher education or any institution dealing with the training of personnel to work with vocational-oriented youth, who are ready to work in this environment. We have almost come to the conclusion to have a training program or a pre-service program or a six-month's indoctrination program, simply to prepare people to deal with the new sets of "bug" words our environment dictates. It is interesting to note that as we are talking about student support services, men are hurtling through space dependent on life support systems which must be as finely attuned as anything we are trying to do, and yet still depend upon human intelligence, human initiative to save lives and to rehabilitate situations. I am absolutely astounded when I consider the number of things that could go wrong with a space vehicle, that with two-thirds of the ship shut down, they still have a margin of faith which may bring them back. This is the approach to education, this is the approach to student planning, which requires not only this kind of definitive flow and flow-charting and matricizing of function, but it also requires human intelligence to back this up. And today we have assembled a fairly representative group, both from the problem-solving and also problem-creating aspects. Sometimes I have to say to my staff, I have got all the problems I need; I need some solutions.

Corrections by experience

We are going to make some overview statements. I want to give each of the panel members up here a chance to describe a little bit about themselves and their activity, to expose them to the questions that you have about the Washington Technical Institute, and the ways that it does or does not serve the student. In the systems approach, you are corrected by experience. We are beginning to find ways, perhaps, erasing some and changing part of what our original flow was, just as at this conference you have changed the program somewhat because of your needs and interests. We are now beginning to become informed about our program, beginning to recommend changes that should be made, especially in retaining, up-grading, and enriching the students that we have, and dealing with our failure factors, our training factors. I want to start off by asking each of the students to tell something about themselves and where they are from in terms of community and what their vocational objectives were when they came to WTI. They do not have prepared presentations. Then we are going to switch to the counselors, and then finally to Mr. Williams.

We find in our financial aid program that even though we have outright grants with no strings, and very generous loan programs, for the most part our students work. They are very suspicious of loan programs generally. If they have a choice between a combination of loan and grant and no jobs, they want the jobs for record and experience.

WTI unique in D.C. higher education

We have almost no media advertising in the newspapers or television and still we get approximately 50 applications a day. Before Washington Technical Institute opened, there was no public, job-oriented school in higher education. Washington is very fortunate to have about 11 or 12 higher education institutions in the metropolitan area but they are all four-year colleges. When an Act of Congress set up the two boards, The Board of Vocational Education and The Board of Higher Education, the mandate of Washington Tech was to become a resource of technical manpower centered in Washington. Not only were some of the proprietary schools charging unreasonable fees, but Washington is the center for technical manpower. When companies which are located in the Washington area need manpower, they have to ship it in

from elsewhere. We do not have a technical manpower base. We are an economically and culturally deprived area, so far as these requirements are concerned.

Choices and changes

Students are too often counseled into higher education, and I think we have problems with much that goes on in secondary education counseling. Nine times out of ten, especially with inter-city youth, we have to ask them to make a career choice at an earlier age than we ask suburban youth to do that. Now, is there a person in this room who would have known in the tenth grade what he was going to do? Yet people are being put into track. It cuts them out of certain kind of opportunities. And even if they get into higher education, hardly a person in this room knew, the second or third year of their higher education, what they really were going to do. Numbers of times you changed jobs, changed locations, did something else. The average adult American changes jobs five times in a lifetime, changes location an average of three times.

These Tech students we are interviewing this afternoon happen to be highly motivated students. We could also have brought to you, especially from our continuing education night program, students who have been out there in the world for ten to twelve years, military, working as GS-3 step 1's who came back to education saying "I just can't get along with this little preparation." Or often there have been bad choices because of bad advice, most of the time street advice. It is not unusual to find in our graduating class a goodly number of students saying, "Well, I got the Associate of Arts degree, but I want to go on."

We are not a transfer institution per se, nor a junior college. Our degree is a terminal degree but we will find students who are willing to invest another three or another four years to get better credentials in the area of their choice. It is a very gratifying phenomenon, very gratifying indeed.

There has been a trend in recent years, reinforced by the civil rights movement in part and reinforced by the reality of the job market, that our youth are simply not going to be accepted and are not going to be successful, will not arrive at top management, nor arrive at quality grade in certain grades of occupations. We certainly and purposefully designed our programs not to conflict with union but we simply did not devise an option for a young person who leaves our school. If you train a person in an area, once he gets through his two years, then he has to fight his way into some market-type, family-type, nationality-type structures. Whatever kind they are, they can give you a lifetime of frustration, and we know what those structures are. Our employment survey, our employment projections for 1955 told us what kinds of men were needed. It also told us what kinds of things would not be problematical, for intra-city and black youth to break into. And that is straight down the line. These young people want to do other things than just the lower echelon jobs.

Possibly there should be some better way to assess our students before they get to this point in their lives. We have to concede that a year or so has been lost. If there had been some effective counseling mechanism earlier, then they would not have lost this year or so. They may have been learning things, but in a sense it is a loss. A school such as ours is a brand-new phenomenon. All of us understand what a BA, MA or a PhD means but very few of us really know the meaning of a two-year school. As I talk to personnel directors in groups and singly, they are getting more and more intrigued with the value of students who spend two years in a school such as this one. The thing we try to do here is make certain that two things occur: first, that the student can apply these skills to the job immediately, working in support of engineers and scientists, doing the kinds of things that have to be done but need not be done by a highly paid professional; second, we want to give to our students enough theoretical underpinning so that as the jobs change (and I think that you have learned already in this course, that jobs are viable, they never remain static, they change constantly) they have a theoretical foundation.

Role of employer educator

As I see my role here at Washington Technical Institute, it is one of educating employers to the kinds of capability that students acquire in a two-year situation. This is not well known. As we talk about the various kinds of programs, employers are saying, "We want to hear more about this." Despite the fact, the labor market is moving down somewhat, we are still having scores of employers who are intrigued with what our students have to offer. So I think, my job is to make certain that our students have acquired the skills and the knowledge and the abilities and then we want to package those students for sale in this kind of job market. The number of atrocity stories which our students could tell of various kinds of experiences they have had are legion. What kinds of things must counselors do differently for technical oriented youth, especially those who are coming to us with a goodly number of scars, real scars from counseling experiences and learning experiences? I think that this is where WTI is more effective in motivating, retaining, and turning around some situations than any other institution I know of in the country. Yesterday afternoon I told someone in the group that I am involved with at this conference about all this number of bodies in the student personnel department who are counselors. I stated that we call ourselves development advisors, however. We pronounce it differently. We don't just counsel, we have many other tasks. Our job is multi-faceted. When you listen to all of this, you will wonder if there are that many hours in the day. First, we make school visits, local junior and senior high schools. We don't do TV and radio newsbeat. We try to get out in the community and let the people know that this is a public institution here for the young people to attend. We also interview every student as a potential student at Washington Tech. Few students come to this school without having been interviewed by a counselor, a very personal contact, to talk about themselves or their school, anything they want to talk about. We interview every student who comes here.

Involved advisors

We also do some testing. We have talked about testing, Dr. Hoyt and others talk about testing, but we think there is validity in some testing. We are talking about interest tests, primarily. We also do some assessing. We have to assess the job we have to do, with and about students, without counterpart of who happens to be their instructors in the school. We do some teaching, also. Development advisors do a teacher course called "Development and Orientation." It is actually an introductory college course. We think that the counselor who will probably see the student quite a bit in his two years here should be involved with the students in teaching this course because he can react on a more informal basis than the teacher probably could. Then we advise, of course. We are advisors, and we advise in many different ways.

We also help with some placement. Some of us have contacts in and around the city. We might make a note as to a particular job. We also do curriculum development. We always aid the department heads and the teachers in terms of helping them get their curriculum set up so it will be relevant to our students in terms of their learning. There is something peculiar about this thing. You know what we do! This is in curriculum development. I think some of us missed one of the things Dr. Dennard talked about this morning. He wanted someone to say that we make certain that our curriculum is relevant, like bringing in people from the field who know what it is like out there in those jobs. We do not want our student not prepared for the job. Also, underpinning is when we do make certain that our students are getting the kind of thing that will make them perform adequately, not just in 1970, but in 1975, on that job. So we feel that by having advisory committees for every curricular area we have here, that we can keep our curricula up to date, and even ahead some of the time.

And, last, but not least, we are counselors and we have to talk to our students all the time. They have many problems, from financial aid, to personal, to job, to home, every kind of situation. We have to be in a position to counsel those students about whatever their needs are. If we don't have the answers, we make referrals to other agencies who might be better able to handle particular problems that might come up. Drug addiction also is a problem. So we have to be able to make these referrals. The counselor role is most varied. We try to support one another. The thing that makes us most effective is that we interact with our counterpart, who happens to be a teacher. In order to do an effective job, we have to talk together. Dr. Dennard calls it inter-facing. We have to talk. We have to know what's happening, we have to deal with the student from two points-of-view, not just from the counselor point-of-view and teacher point-of-view. If that happens then the student will get one thing from the counselor and another thing from the teacher. We have to talk so that we all will be doing the same thing and following the same road. Inevitably, what we are trying to do is help students make decisions for themselves. That is what we are all about at Washington Technical Institute.

Contiguous faculty, counselors, and students

I would like to further point out that part of this inter-facing with the faculty is that we try in every instance possible to have the counselors and the faculty contiguous. They share a suite of offices. We do not have a counseling center where a person who has an ache has to run over and see about making an appointment. We have an open-door policy. In fact, for most of our counselors we have a no-door policy. There are no doors on their cells as counselor cubicles at all. And any student, at any time, can come to see the Vice President in charge of Student Affairs or they can come to the President of the institution by simply walking in, because the door is never closed.

And some of our students say that when they go to conferences, some of them have caucuses on militant campuses while we are all docile and peaceful at WTI. That is not true either. There are occasions when thirty or forty students are in their kicking over the desk and making 95 non-negotiable demands. But they don't have to knock down the door to get in to kick over the desk.

Let me mention something about the negotiating of systems. We have put students in real earning situations with people they will have to face when they get out there in the community. I think that where most job-oriented youth, whether they have a four-year baccalaureate or associate of arts degree mess up. They don't know how to interview. They come in appropriately dressed. They telegraph things nonverbally. These are little asides, colloquialisms, whatever you want to call them, which lock people out, and which lock out any effective interviewing. Everybody in this room has learned to play that game. If you are middle-class, you learn it at home. You learn it by the way your parents help you project yourself to the minister when he visits or to the friends at college. There has been all kinds of talk in terms of public school administration—that it is not an educational problem, it is a social problem. We make no distinction here. There is no end to the classroom. There are little rooms we have to add, little cubicles of border that we have to add, for accreditation, for orderly presentation of information, but as Mr. Wigglesworth says as he philosophizes many times, the most effective orientation to the world of work and the effective orientation the curricular area occurs when students are sitting around rapping, and that is where we need to be.

Now there is another part of this exercise. This has to do with simply the telegraphing of certain kinds of rhythm that begin to develop in our student, a certain type of anxiety. If you look at our applicant file, the biggest concentration of applications to the institution are in business; in fact, in computers. The next largest is in the engineering category, not electro-mechanical as distinguished from something else. The next largest is in nursing. Now why? Students have heard of these fields. They know how to spell them. There is some kind of prestige associated with them. They are advertised on television. A man has a white tie on, and little wheels are jumping, and they say you can get a job. But we have inhalation therapy, which is a very viable career option. And I don't believe that I have ever met anywhere a secretary or education counselor who frankly was confident to counsel people into our kinds of technical areas. We almost have to

reframe the people out there, because they are busy and harassed. We have almost sand-bagged that whole operation. We go out ourselves, we see assembled for us any group of citizens who want to go to an institution of higher education that is technically oriented. "Vocational" is a bugaboo word. We hardly ever use it. Our Board of Trustees is called the Board of Trustees of Washington Technical Institute. In the law there is a contradiction of terms. Every time they refer to Washington Technical Institute they call it a technical institution, yet our Board is called the Board of Vocational Education. We are a technical school, and we never mention vocation. When we go to other schools, we find it best simply to have our own people who understand talk about technical education because there are not very many, even of you people here, who can explain and understand the very subtle nuances of the twenty-six curricular areas offered. We are offering some new courses this fall. Two are in the environmental area; *Oceanography* and *Waste Water Pollution*. And then we have *Mechanical Tech* being introduced this fall. We have an *Industrial Tech* program which we have ordered the machinery for. These areas are so exotic and so new that it boggles the mind. And we don't have that kind of specific technically competent technical counselors out there in the field.

Support programs protect student from too-soon employment

One last point. The problem we are having now in many of our curricular areas is that there is such a shortage of technically trained youth, that as soon as we place them in part-time or work-experience jobs, people want to keep them, even with the little training they have had. Our students end up resisting the opportunity to go to work full-time now. They want that credential, and they do want to work, which runs against every kind of conservative sociology and economics about persons from inner city areas, and especially poor persons, not wanting to work. Our youth want to work, and they want to have credentials. And when the Bureau of Standards or the Harry Diamond Laboratory says to a one-year, technically trained person, "We are prepared now to give you a job paying $2.60 or $3.60 or $5.60 an hour," our students have to tell them that they want to get our degree. That is the impact which our support programs are having. Incidentally, at Washington Tech, which is different from any other school that I know anything about, the office of the Vice President of Student Affairs really controls the various student phases—admissions, registration, course scheduling, counseling and assessment, placement, discipline in student government, testing. And even though it shows on the charts that I have a ratio of 30-1, we have all of these program concerns, probably the most complex and varied program anywhere in the institution. I don't think there will be any question about that. Academic people have a much clearer focus. We do everything except cut the grass and teach the classes. And I think that gives us a more viable model, controlling the variables. Students no longer have to fight five or six levels of administration to get a course changed or to get a course added but they still have to fight me. That means I get more sit-ins. We don't have an equal number of sit-in demonstrations. But it is better that way.

WTI's training posture

To take a word from our president, we have exercised that kind of activity, by moving Washington Tech into a training posture. We simply have to train these folks. Since we are a federal agency, we are therefore constrained by federal laws in things that we can do. As an example, we have a certain number of slots which are determined by the federal government. We may need three more staff members to handle something on a full-time basis. Congress has not given us those slots. Therefore, we are restricted. But out of our '71 appropriated funds, we will begin to have workshop centers, workshop seminars, etc., because we are unique in this area. Other than Virginia Polytechnic Institute, Rensselaer, Lehigh, or MIT, we are alone in the Washington area. We are going to get into the training business.

We do have a continuing education program, and the students in that program tend to be older, tend to be people who have worked a full-time job all day when they come here. They tend to have a really no-nonsense attitude. If you were to break it out, night school, day school, there is probably a three-year or four-year difference in the average age. The break-out is 60 percent male, 40 percent female. I have a feeling that the mean age in the overall institution is going down. I couldn't substantiate that. As we are able to do the job with junior high and high school, we will have more people spending a year at Howard or somewhere else, or going to the military first and then coming here. You see, this institution only dates from 1968. It has hardly one whole cycle of junior-senior high to draw on as a new manpower base. And once again, we have these new curricular areas opening up. I think our average age would be higher than the average institution like this. And we do make a distinction between day and night student programs. Interestingly enough, as a curricular innovation in the summer, we are arranging the summer quarter program so that a person can come as late as three in the afternoon and take up to 15 hours during the summer.

We are waiting to see what will happen. We get studies from the faculty saying that they can't find anyone who is willing to teach at night, which means that the faculties teach the courses they want to teach when they want to teach them. And because of our new mandate of classes, we are going to change that. We are going to offer the courses that the students want to take, and that is going to draw some strange reactions. It is true, our budget is more generous than most. The average federal government cost, if you take capital expenditures, personnel expenditures, and whatnot, against our appropriated slots or the FTE is about $3,000 per student, per year. If you deal in your agency with real cost, as we are required to do in the federal government, and amortize capital outlay and personnel cost, and depreciation, etc., as you really ought to do, I am saying in Washington, D. C., where the per pupil allowance is $676, you have probably quadrupled that cost if you do your cost accounting the way we do. If we simply did cost accounting the way the public

school did, we would come out with an average expenditure of per pupil of $750. I am being very frank. Ours is a real cost as opposed to the kind of funding public agencies normally do.

Personnel costs higher, demands greater

As an example, Senator Proxmire, who comes from Wisconsin, one of the most technologically advanced states in the union, asked us "What program do you have for renewing your equipment so that you are not teaching people with obsolete hardware, as I have seen happen with many vocational programs." This means that every five years every piece of equipment that a student is using is replaced, so our costs are obviously higher. Our equipment is more advanced and our mandate is not to be current with technology but to be in advance of it. Also, our salary structure puts us in the upper 60% of the nation, in higher education institutions. As a consequence, our personnel costs tend to be higher. But our demands on personnel tend to be much more intensive. Our developmental advisors are perpetual motion machines, on campus, off campus.

Our counselors are based on a ratio of 30-1. By counselors, we also mean everybody in registration and admissions. I have 44 working with me but I am costed out at 47. A little more than half of the people are working with students on a full-time, regular basis. The actual ratio in the D. A. area, is likely 65- or 70-1. But I think we are going to keep an optimum counsel load below 100, probably around 70. We have not appreciably dented one question, the normal outflow of students. We compare favorably with Harvard in students who are leaving every quarter, those who are not making it. But I think that is much too high. And we have done some rather indepth studies to see what has happened, as soon as students leave. I am very proud to say that less than 4 percent are authentic drop-outs. We have students leaving for the military; those who come here to gain confidence about four-year schools and therefore transfer to liberal arts school; those who get a better job because of one course, get up-graded, and then they will go on to a better job. We are planning to cut the rate of 4 percent dropout because it is too high. We are going to do a lot of interviewing. Everybody who leaves Tech is going to have to sign out of here, and we want to know simply why he is leaving; frustration with a math teacher; frustration with a D. A. he can't find; hostility to an administration which is paternalistic; anything that he has to say. It is right now we are in the situation where the recipient of the student support services is perhaps the best one to tell us what we must do next. With all the money and with all the planning, you still need that human element.

Learning our way

Yes, we are attempting to be a national model. We are not attempting to blow trumpets about it yet, we are simply learning our way. We have concluded that one other thing we are going to have to do is get heavily involved in training persons who have bachelors' and masters' degrees in counseling and guidance how to counsel technically oriented youth, and how to counsel in relationship to these kinds of things: the medieval mentality of education; every man doing his own thing; nobody being evaluated by anybody; and the psycho-sanctity of the classroom. What is the student retreating from? What happened to him? Why isn't he happy in that program? We have turned it around to say "Students always know if they are properly taught and motivated, and if they are not properly taught and motivated, it is up to those teaching and motivating to change their behavior, to get in there and work with them." The cost for a student attending WTI is $1,300 annually including books, transportation, food, and tuition. Of that we figure that $200 or so is earned during the summer and can be applied to his education here. We allow at least $900 to be earned by work-study over the course of three quarters, and therefore applying $900 to the $1,300, plus the $200 he is able to earn, that leaves probably $200 to be gifts, grants, and scholarship aids. We feel that this is realistic. However, almost 70 percent of our students by any reasonable description, come from poverty areas, model city, or urban renewal, with a family income less than $7,000 for a family of six. Our students are terribly poor and, therefore, we have a higher percentage of students receiving these kinds of aid and help. We feel that this is justifiable and supportable. For instance, next year, out of a student body of 2,500 students and FTE of 1,950, we will be prepared to help at least 800 students in various ways out of our own resources on file, and increasingly the work will be related to the kind of work that they will have to do in the real world.

REFERRAL SERVICES

Lucille Johnson
Counselor, AMIDS Program

My topic this morning deals with "referral" in your model for student services, a summational point in the system This component describes a repository capacity that signals the move to employment or post-secondary education. Referral is a reflection—not an independent category. It has the whole system as its setting. Today we need to re-examine this setting and the impact it has on the people who are part of it.

I want to back-track and explore some concerns before we get to this release point. Education is on the stage of conflict. Just as our other programs are being tested, so vocational education finds itself facing new challenges and demands from students, teachers, parents, and the community. Can we accept responsibility for modifying and assigning priorities; for restructuring a system that will reflect the mood of the 1970's? I believe we can.

Vocational education must be inclusive

What I would like to suggest is a larger framework of operations that extends beyond the responsibilities we now accept as ours. This concept embodies a broadening process that is *inclusive* not *exclusive*. Exclusive indicates a limiting or designating procedure; inclusive embodies all-embracing features.

Vocational education has, on its own, attracted too few students. Recruitment efforts have been discouraging. However, national and local needs and pressures now dictate otherwise. We must include more students in vocational education—all kinds and all groups. Above all, we must abolish the male-female myth which excludes female students from many vocational areas. Let me enlarge on these ideas.

We need blacks, whites, Puerto Ricans, Mexican-Americans, Indians, southerners, northerners, westerners—all ethnic and geographic groups. One of the most serious errors we could make would be to ignore the skills and abilities of any one group of people. One of my interest areas involves training correctional officers in the D.C. Department of Corrections. Statistics from the President's Commission on Crime and Delinquency tell us that the young offender, age 16-26, comprises a large part of the penal population. Under the new rehabilitation philosophy thousands of these young people will rejoin the community. Here is a vast source of manpower that will need to be funneled into educational programs. Behind the walls are hundreds of bright young men waiting to be guided into productive skills and jobs. Our task is to serve them.

New groups surface championing causes and ideals. One such is the Women's Liberation movement which is working to improve the status of women. We need to be cognizant of this thrust because for a long time we have excluded females from entry into certain fields. A large proportion of vocational offerings are male-oriented. Why? Who is to determine that females cannot be printers, draftsmen, or surveyors? We need females in our programs. We need realism and interest for all.

Those who feel we can afford to be less than inclusive in our efforts and that we can resist change have only to examine the educational conflicts in other arenas. Pressures are being felt; demands are being met. Our traditional assumptions are obsolete and need replacing. Vocational educators must encourage an encompassing philosophy or bear the burden of being as handicapped and disadvantaged as some of the students they serve.

Enlarge the opportunities

We are being asked to enlarge opportunities and deal with the complex problem of educating the masses. Obviously, this is not to be done alone. Important as education may be it is not a cure-all. Involved in all that we are doing are problems of people. Supportive services are appendages to vocational education—strengthening measures to expedite adjustment and insure success. These services are designed to alleviate problems and needs. What kinds of supportive services are available? Legal services, counseling services, health services, recreational services, family and homemaker services, financial aid services, transportation services, educational placement services, employment services, day care services, senior citizens services, consumer education services, psychological services, testing services—and more.

Some combination of these services will be used in our educational system to assist students. Consider the young offender returning to the community with few family ties or friends. Where does he turn for help?—usually to a school or neighborhood agency. If it is a school, trained staff familiar with all of the services will make them available to the student. Here again, is the inclusion process. Agencies outside of the school setting may cooperate in assisting needy students.

We are narrowing the gap. The mobilization of all of our resources will make a difference in the educational capacity of students.

Time element handicaps vocational education

When I am asked if we can accomplish all the things that need to be done in the regular school day, my response is negative because I now feel that we are handicapped, particularly in vocational education, by maintaining school hours that are close to 9 a.m.-3 p.m. I cannot help but feel that we must extend the school day and restructure our course offerings. I am advocating an 8 a.m.-8 p.m. school day. Students are asking for more courses; industry wants better

trained workers; students want jobs; students need supportive services. To cram all of this in the present time structure is a disservice to our attempts to provide quality education.

Outreach means school involvement. Our exclusion-inclusion theory tells us that there are many shortcomings. We seem confused and overwhelmed when hordes of students find vocational schools unacceptable or know little about careers and the world of work. Repeatedly we turn to secondary schools—the ninth grade is a favorite spot—for S.O.S. assistance to get students interested. The result: too little, too late.

I strongly advocate a different approach to this whole problem. I advocate an inclusion approach, a comprehensive program that begins at school entry and continues through grade twelve. Why, you may ask, span twelve years? All of the research I have reviewed tells me that this time span is necessary. All of the federally funded programs I have read about say this. All of my observations and visits to programs across the country as a consultant reinforce my approach. I am convinced that you begin vocational education in the kindergarten, and that this layering process continues throughout the student's school life. I am not talking about a superficial activity handled by neophytes but an in-depth program spearheaded by the best vocational educators in your community. I want them to have the leadership in structuring a program that includes what they feel is important.

Better exposure is necessary

The idea behind my proposal is that school entry is the time we begin to provide students with the tools, equipment, and experiences they need for vocational stimulation through a coordinated program involving elementary, junior high, senior high, and vocational school staffs and students. I would survey every resource including government agencies, manpower projects, and industry for assistance. I would develop the best possible instructional program utilizing imaginative methods and materials. Every teacher would participate in in-service training. Every vocational school would be utilized. My learning laboratory would be varied—in the schools or the community—stationary or movable. Maximum utilization would be made of all existing physical facilities in the community. In short, this would be a well articulated, high-priority educational program offering a total approach which if detailed could go a long way in making a vocational impact on every student in your school system. I would like to elaborate on students and staff. Student involvement is important because I firmly believe that some of the best teachers are our students. I see a major role for vocational education students through a peer group learning approach. I see also the development of jobs and training through coop and OJT. Visualize a vocational student in a third-grade demonstrating barbering techniques? helping youngsters understand a wiring circuit; or firing up a small engine. When counselors talk about satisfying needs there is no question we have it here. To carry out this program there must be teacher and staff coordination. Academic and vocational teachers, elementary and secondary school teachers will form a team. Attitudinal changes are needed to effect a realistic awareness of this total concept.

Briefly I have described an aggressive plan to resolve some vocational education problems. We have the answers to some of them. What we need is a vehicle for implementing solutions. This is one way.

Counseling is a prime service

Of all of the supportive services I have described, counseling is the one which strikes me as a prime service. I want to share some thoughts with you about this process. There is no doubt in my mind that trained counselors are essential and doing an excellent job in some tough areas. But counselors cannot do it all—there is far too much to be done. There are certain services that a counselor performs that are specialized. Education and special training are needed for them. However, there are many things other staff people can do. The simple definition I have for counseling is a one-to-one relationship established for verbal exploration. The printing instructor can counsel; the secretary can counsel; the senior student can counsel. Many times these people make better counselors. They should be actively involved in this service.

Earlier I stated that referral was a summation—a release point to employment or post-secondary education. Students who have gone through this system and are at this point are handicapped because all that has preceded has at best been second-rate. I don't believe we can begin to think of a quality referral system until we change our vocational program. We are now operating with band-aid techniques and will continue to do so until a new system evolves.

Referral to what?

We need to look carefully at referral—referral to what? Frustration and failure—in employment or post-secondary education. What I am saying is that we have a responsibility here—the inclusion process again—to be sure that our educational and employment opportunities will provide maximum success for those being referred. This is significant when we refer minority groups—especially blacks. Were I in this spot I would want some assurances—that the *employer* was EOE—and had some high visibility (blacks in positions of responsibility as reinforcers)—that the school setting provided a wholesome learning climate of acceptance for all. I am proposing that we accept what I call a unique obligation—to do more; plan more programs; reach more people; develop more effective approaches; assume greater leadership.

This week we partake of the knowledge of others; tomorrow must be for giving what we ourselves create.

Can we accept responsibility for modifying, assigning, and restructuring a system that reflects the mood of the 1970's? Do I believe we can? I know we can!

THE JOB BANK

Maurice Hill

Although the Washington Metropolitan Area includes the District of Columbia, nearby Maryland, and Northern Virginia, it is really a single labor market. While the District of Columbia has an excess of workers and the area surrounding D.C. is a labor shortage area in nearly all levels of work opportunity, there are also jobs in D.C. which can be filled by Virginia and Maryland residents.

Many jobs are not matched with employees simply because all parties involved did not know of the common needs. The Job Bank is a single clearinghouse for persons needing jobs and for employers seeking workers. It will provide for more efficient job placement of all applicants by listing available jobs in a Job Bank Book which will be revised and distributed daily to 21 manpower locations throughout the Washington Metropolitan Area. This multi-jurisdictional approach includes the District of Columbia, and its Maryland and Virginia suburbs. It is our hope that with the support of all persons and agencies concerned with manpower in the Metropolitan Area this system will be the initial step in a computerized matching system at some future time, based on our experience, national experience, and the identified needs of this labor market area.

Minimizes competition for manpower services

The Job Bank is of particular importance to community agencies which have a vested interest in a particular geographic area or special clientele group. The Bank makes it possible for the same manpower services to be provided at one time to all communities and groups of the area. This will minimize the need for competition for manpower services. Furthermore, arrangements can be made for community agencies to have a desk either at the Employment Security Building or at a Neighborhood Center so that the community group's trained staff may use the Book to refer their clientele simply by calling Central Control for referral clearance.

At the heart of the Job Bank operation is the Job Book. This is an indexed computer printout that identifies all the jobs listed as available that day in the Metropolitan Area. The Job Book contains information on approximately 10,000 separate job openings from over 1,000 different employers. The Job Bank Books are updated every day to reflect all changes and additions to job orders since the previous day's printout. Copies are delivered to the outreach offices and outstations daily. In addition, messengers bring information from the outstations to Central Control every day for the updating of the Book for the next day's printout.

Instant service to the placement specialist in the 20 outreach centers and other agencies in the Metropolitan Area is rendered from a referral desk. The control function of the referral desk consists of making sure the employer receives only the number of applicants he has requested.

The Washington, D.C. Central Control is located in the Employment Security Building at 6th and Pennsylvania Avenue, N.W. From this office the 20 outstations and many more cooperating agencies will receive the day-to-day information needed to serve the job seekers and the businessmen of the Metropolitan Washington Area.

Why should job seekers use the Job Bank?

The Job Bank Book, located at every Employment Service station throughout the Washington Metropolitan Area, saves the job-seeker from going from office to office, checking each separate listing of job openings. He is exposed, at a one-stop location, to total area-wide job listings, whether the jobs are in Maryland, Virginia, or the District of Columbia.

In each office, placement interviewers and counselors use the entire Job Bank Book when talking to job seekers, rather than specializing in any particular occupation. The applicant has a better opportunity to move out of his occupational area into related or even non-related jobs, when it is to his benefit.

Training possibilities

If the job-seeker is interested in an occupation for which he is not qualified, he may investigate training possibilities located throughout the Metropolitan Area, also listed in the Book.

The job-ready applicant who simply needs referral is able to get much quicker, more efficient service by immediately identifying a job in the area of his training and/or experience. More staff time can be devoted to those who have never worked, those who have to change occupational areas, those who have difficulty adjusting to job situations, and those who meet employer resistance, including such priority groups as veterans, the physically handicapped, youth, older workers, and ex-offenders.

Why should employers use the Job Bank?

The Job Bank is designed to be used by employers as a combination job listing and recruitment service which will guarantee maximum exposure of job openings in the Washington Metropolitan Area covering a radius of over thirty miles.

To list job openings, employers will call the Washington Metropolitan Area Job Bank Central Control (347-8080) and supply pertinent information concerning the job available and the number of persons desired. After the job order is taken, it is entered into the computer to be printed out in the Job Bank Book which is a computerized listing describing job openings and training opportunities in the Washington Metropolitan Area. Approximately seventy-five copies of the Job

Bank Book will be printed daily and distributed to 21 Manpower agencies throughout the Washington Metropolitan Area, including staff at the Job Bank's central location at 6th and Pennsylvania Avenue, N.W. An employer placing a job order with the Job Bank will be assured that his job will receive maximum exposure to qualified and potentially qualified applicants throughout the Washington Metropolitan Area.

The number of applicants referred to a job will be controlled so that the employer so that the employer and his personnel staff will not be confronted with a greater number of applicants than is desired. A job listed by an employer requiring immediate referral action will be sent directly to the placement staff in order to provide quick service. The only responsibility of the employer will be to immediately inform the Job Bank Central Control (347-8080) when the job has been modified, filled, or cancelled.

One of the most significant objectives of the Job Bank is to eliminate duplication of telephone calls and personal visits made to employers. Employer contacts will now be made by a staff of job developers whose sole responsibility will be to solicit job openings, provide technical services to employers and coordinate job development activities. This staff will represent Manpower agencies in the entire city as well as throughout the Metropolitan Area and will be available to provide such technical services as job restructuring, industrial services and manpower training expertise.

Maximum applicant exposure, computerized job listing, coordinated employer contacts, controlled number of applicant referrals and extensive technical assistance are among benefits an employer will receive when using the new Washington Metropolitan Area Job Bank.

OPERATION OF THE JOB BANK

STATION 1: ORDER TAKING AND VERIFICATION. Receives Job Orders from employers by telephone and calls employers to verify referrals and to confirm the status of orders.

STATION 2: HOT LINE. This is the only station used by all locations for contacting the Job Bank for answers to questions on any problems pertaining to Job Bank Operations.

STATION 3: STAT DESK. Edits all statistical cards received from referring locations prior to forwarding them to data processing and maintains an alphabetical file of these cards after they have been key punched.

STATION 4: REFERRAL CALL DESKS. Consists of two persons who receive requests by telephone from referral stations in all locations for permission to refer applicants on orders in the Job Bank Book. This station maintains a current record of all referrals made on each order and permission to refer is not granted until the predetermined number of referrals has been made on each order.

STATION 5: CHANGE STATION. Receives all changes on Job Orders from participating locations and prepares them for data processing, routing them through the Master Control station.

STATION 6: REFERRAL CLEARANCE. Responsible for matching all forms pertaining to verification of referrals and routing verifications to data processing.

STATION 7: MASTER CONTROL. Responsible for posting all placements, changes, adjustments, cancellations, closures, and other transactions to the Master Copy of the Job Bank Book, and for editing all materials prior to routing to data processing for updating and reprinting of the Job Bank Book which is reprinted daily and delivered to all locations prior to 8:15 a.m.

STRATEGIES FOR FOLLOW-UP OF VOCATIONAL EDUCATION STUDENTS

Dr. Mary L. Ellis
Technical Education Resource Consultant

1. The smooth transition from school to work fundamentally requires a team approach—it requires active involvement of at least five or six parties—
   a. student
   b. teacher(s)
   c. counselor
   d. employer
   e. parents
2. The practice of follow-up should begin *before* the students graduate.
   a. Impress on students the importance of "feed-back" to the school . . . their suggestions and advice are important to current and future students, as well as the school.
   b. Constant "feed-back" from former students should assist in:
      (1) up-dating school offerings
      (2) adding new concepts to the curricula and deleting irrelevant concepts

(3) developing a psychology among students of what to expect on the job. Does the graduate's concept agree with his anticipation of the job? If not, why? How is it different? What should the school do, if anything?
(4) bridging the gap between graduates, students, school, and employer
(5) determining how the school is viewed by business and industry
(6) developing ways and means the school might be responsive to the needs of business and industry

3. Require each student to obtain a social security number in anticipation of employment and for follow-up purposes—names change (especially girls) social security numbers do not.
4. Assist younger students in obtaining work permits—in large cities a police clearance may also be necessary. To acquire a police clearance a student must have a birth certificate. Use the guidance counselor to the maximum extent feasible.
5. Establish a student newspaper and publish it quarterly—write a paragraph on a certain number of graduates each quarter telling where they are and what they are doing.
6. Create an Alumni Society of Graduates. The society could sponsor seminars composed of students, graduates, and employers. The school could serve as host for these seminars. A teacher from the school could be selected as ex-officio adviser to the society and could assist in developing a Program of Work for at least a year's activities.
7. Sponsor, on a semi-annual basis, Employer-Graduate Seminars. Employers and graduates would be requested to share experiences. Such seminars could result in students acquiring a better insight into the world of work, as well as develop an identity with their own peer group. Impress on both the employer and the graduate the importance of "feed-back" to current and future students in school.
8. Develop a follow-up questionnaire to be used with graduates on a semi-annual basis. Ask students to react to the questionnaire before it is finalized Spend at least one class session with students who are graduating to discuss the significance of their participation in completing the questionnaire and returning it to the school once they are employed. Update the questionnaire as needed. The questionnaire should include, but not be limited to, such items as:

   a. progress on the job—that is—job advancement and if possible salary increments
   b. is the student enrolled in up-grading courses
   c. name of firm where he is employed and its basic responsibilities
   d. significance of formal education while in school
   e. suggestions as to what would have been useful while in school or what could have been deleted
   f. current or anticipated military status
   g. is his work directly related to his formal education, indirectly, or not at all
   h. how many times has he moved from one job to another and for what reason(s)
   i. future educational plans, if any

9. After students are employed, don't forget them. To the extent possible assign Job Coaches to work with graduates on immediate problems and issues. Such problems may range all the way from dress, work habits, attitudes, to inter/intra-personal relationships with the boss and other employees.
10. Where feasible and appropriate work with Employment Service personnel to assist in follow-up of graduates.
11. Seek out relevant research on follow-up studies and use such sources as:

    a. The Division of Comprehensive and Vocational Research, U.S.O.E.
    b. The State Vocational Education Agency and/or Research Coordinating Unit
    c. The Center for Vocational-Technical Education, Columbus, Ohio
    d. The Center for Curriculum and Research in Occupational Education, Raleigh, North Carolina

12. All of these suggestions require time and resources. Create student committees to work with the teacher, counselor, and other appropriate individuals in planning and operating a follow-up program.
13. Computerize your follow-up program so that data retrieved will be manageable and useful for management decisions, curriculum offerings, and program planning.
14. Education today is big business. Just as industry constantly monitors its products for weaknesses and for areas of improvement, the school should monitor its products—the students—for ways and means to improve their competencies and knowledge. A follow-up program can assist in modifying curriculum offerings, school philosophies, and management decisions to this end.
15. Encourage students to continue their education. Education today is a life-long process. Current projections indicate that an individual will need to be retrained from five to seven times throughout his working career.
16. Develop an information system in the school that provides for both vertical and horizontal communications. Establish a two-way communications system. Students and graduates should know where to go for information. School personnel should know where and how to obtain information from the students.

PARTICIPANT REACTION SESSIONS

During the course of the conference, participants were given daily opportunity to react to speakers and to conference content and format. Conference leaders responded immediately with changes in conference structure to meet the expressed needs of the conferees. This conference method was applied throughout the week, and resulted in a free flow of ideas and interaction between participants and planners. The conference dynamics were based on flexibility and succeeded, at least to some extent, in helping participants to feel that they did have more opportunity for change and innovation than they might have believed.

Informal group discussion and task force assignments produced much lively interaction and expanded understanding of problems and solutions in the vocational education world as it affects the disadvantaged vocational education student in metropolitan areas.

Conference participants were eager to inject some action into what they saw as educational situations with great possibilities but with the barriers of tradition and fear of change blocking innovation. During two brainstorming sessions, participants were asked to fire ideas as rapidly as possible to the moderator. Two recorders, writing at two blackboards, were used to keep up with the fast pace of idea-communication. These sessions produced the following unedited results:

Stated needs included:

Consider the relationship of personal desires to student desires; create mobile job evaluation centers; institute outreach and community involvement; relocate some services; improve the image of vocational education; involve management and labor; involve industry; advertise; catalog available services; reorient vocational teachers; use paraprofessionals including bilingual ones; strengthen interpersonal relations; use supportive community agencies; increase categorical aid; involve students in bringing services to others; create a career development package; change guidance concepts; reeducate administrators; have more and better use of advisory committees; identify persons responsible for program development; reorient parents' attitudes toward vocational education; use planning models; create federal government awareness of problems; encourage agency coordination within schools instead of establishing new centers; merge NEA and AVA; create a blanket vocational education act without categories; put the English department under the direction of the vocational education department; have vocational educators as school principals; begin lump sum funding from USOE directly to local education agencies; change vocational education's name to career education; have local certification standards; get better agency coordination; obtain grant aid; orient staff to possible services; reassess philosophy of secondary education; reschedule programs to include teacher/staff development time; have quick funding from USOE; allow lead time to implement new plans and programs; create new role for vocational education department of HEW-USOE; elect a vocational educator for President; finance education through national income tax; create student-to-student tutorial force; recognize the importance of public relations and plan for them; sensitize teachers and other student personnel; have workshops to encourage relationship between vocational education and academic education; relabel specialists as technicians rather than paraprofessionals.

Discussion was also held regarding action plans formulated by participants and all of these indicate there are avenues for change open which have not yet been used. The following action plans were shared by participants:

Institute dialogue between academic and vocational teachers; orient counselor and guidance personnel; evaluate student needs and admissions with systems approach; create counselor/student dialogue with more outreach to students; communicate with state and federal officials; organize support services; use support services already available; train additional lay people as staff; develop job bank; do follow-up survey; design team teaching programs; change grading system; implement career development and extend it to lower grades; develop curriculum materials; refer more guidance persons to conference like this; involve industry, labor, and community; develop a specific living model school; create post-high school programs (pre-apprenticeship); institute flexible programming; develop a directory of local supportive services; improve the position of vocational education; present outline of this conference; improve coordination of MDT and the regular vocational education system; reassess existing programs; and state vocational objectives clearly.

PARTICIPANT REACTION SESSION, RELATIONSHIPS OF ALL INSTITUTIONAL STUDENT SERVICES

Dr. Hamburger, presiding

MODERATOR: Let's take a look at the idea that has been growing out of the group about a center of services or the type of services that we can create that will help the student move from the outreach program into the institutions. It has been mentioned from several standpoints that there might be one center, where different agencies each have their person to evaluate their own services, and provide learning experiences in that center to help this student identify with particular education agenda. What are we supposed to do with this idea in describing this center, these services, or building a model of how to operate, or describing the type of thing you may have seen going on in such a center? I wonder if we can't make a real contribution and get a hold on this for the next hour, and try to provide a framework, the prescription of services, some learning experiences that help in the orientation period. How could this thing work?

Why would this type of personal services be important? Do we send the students off to this agency and that agency to stumble around and get shuffled? How could you bring these services to one center and coordinate them in such a way that the students could pursue their learning process?

This center is to operate in the incumbent secondary program. Though these students may have physical and activity problems those experiences are still necessary regardless of what level we are talking about. I hope we can keep from getting hung up on topics of whether it is secondary or not secondary. Let us see if we cannot stay out of that.

COMMENT: Your mention of this center kind of presupposes that this is the way that this can be done. There are other ways. Could the students all come to one center in order to get this?

MODERATOR: Let's take a look at the alternatives. The students need services regardless of how you provide them. I don't want to put you in a box where you have to battle.

COMMENT: One center!

COMMENT: Why don't we talk about what that means regardless of where you are and utilize the resources that you have first and then go on and give them something else. For example, people are speaking about counselors. I only get a chance to meet mine every so often.

COMMENT: Can we do this thing without it necessarily having to be a new facility? That is my interpretation of supportive services. There are some services right there ready.

MODERATOR: Well, you have to know about them to help. But if you can support his ideas, explore his ideas with relation to these additional services that need to be provided by using some instrument evaluation instead of treating the center as a separate facility, let's start there.

COMMENT: I see education as a total process, and vocational education as one piece of varying importance, depending on the background objectives of the individual. Sometimes it is nothing more than avocational, a good way to get into a hobby, and sometimes it is toward the end of the total educational process. Maybe the student is headed for medicine and wants to learn how to build a boat so that he can build it for himself in his spare time, or maybe he wants to be a boat builder and learn some first aid so he can take care of his cuts and bruises. Some place, this information has to feed into a point on this continuum at any moment, and the point on this continuum is ever shifting.

COMMENT: Can we accept Dr. Hamburger's premise that most supportive services are personnel services, and get down to the guidance function?

COMMENT: Do you want to establish some parameters for guidance and these personnel services?

COMMENT: I think I remember that the statement was made that most personnel services were administrative services that didn't require too much administration.

COMMENT: Are you speaking of the kind of supportive service which teaches good grooming, how to be well-dressed, good table manners, how to mix with other groups?

COMMENT: Should we divide this up into disciplines, or such areas as trade and technical, agricultural, homemaking, distributive?

COMMENT: Supportive services applies to all of those areas, do they not?

MODERATOR: Let me tell you what happens here. At Washington Tech I get some of the problems regarding supportive services that are an aid as students come from secondary education to higher education. This is a value judgment. You are really projecting your own values. Your culture is not necessarily the other person's culture.

COMMENT: First of all, if we can list the supportive services, it would be good. I would like to define everything, in fact, that is supportive services, and proceed step by step.

COMMENT: I think we ought to talk about the objectives of supportive services.

MODERATOR: What supportive services are you concerned with at the present time?

COMMENTS FROM AUDIENCE: Health, transportation, counseling, recreation, retention on the job, followup.

MODERATOR: Do you want me to divide this up now into administrative as opposed to personal? Do you want me to start another continuum listing personal, as opposed to the more general ones?

COMMENT: I would like to have defined the difference between objectives and concepts.

COMMENT: The concept is the idea. From that you get objectives and generalizations.

COMMENT: Somewhere along the line, we really need to get at the whole idea we are dealing with which is defined supportive services. We are listing what *we consider to be* supportive services. But what *are* supportive services? How do we utilize them?

COMMENT: What supportive services come under health, for example?

COMMENT: Suppose we have a narcotics problem. Perhaps this means a referral. And that is utilizing supportive service. If we can counsel, work with him, talk with him, send him out into the community to work, this is supportive services. This is utilizing whatever resources we have in the community also.

COMMENT: Suppose you do not have a place to send him for employment. Suppose this is a small town where facilities are not available for employment.

COMMENT: Send him to the hospital.

COMMENT: How do you get him to the hospital?

MODERATOR: An important question is, in your own community, do you have supportive services, and if you do, how do you utilize them? We are talking about dealing with human beings and how we can make the services we do have work better. I don't think we should be concerned with concepts or definitions, just human beings.

COMMENT: How do you know how to refer someone to a welfare program or refer a person to the rehabilitation program? He is just a high school student.

COMMENT: First you would have to check with the administrative part of the program in your community and see what the set-up is. Find out about the counseling services and whoever they have to help with mental or medical problems. These services would have to look into this problem and find out if they can lead him into steady work production. And you, particularly, for instance, if you have to take a problem from your area somewhere else because you don't have a support service in your area, you had just better get yourself together and take that home and get organized so you have some kind of supportive service in your area.

MODERATOR: At this point in time, do you feel you are knowledgeable about the support services that exist in your community? Is it necessary that you have younger people to supervise the people that need this information? In your adult education program, does this present a problem in your learning process? Is this something that you can utilize?

COMMENT: Model Cities takes care of all of our supportive services.

MODERATOR: Then somewhere there is a need for somebody to have the information on supportive services within their community in order to make referrals. Now, do you suppose that this is you?

COMMENT: I am talking about adults, but there are many people who are in high schools who are inflexible, who are concerned with guidance, who don't know the function of rehabilitation, for one thing. I have been trying to figure out some things that could be done.

COMMENTS FROM AUDIENCE: General discussion of the numbers of health department services available in almost any community, where they are, and how they are supposed to function.

MODERATOR: Every individual has the need to take care of his physical, psychological, and emotional self. This is where motivation stems from. The first need is to protect ourselves physically. Next, and sometimes this overrides the other, is the need to protect our psychological selves, and this is why sometimes people kill themselves then they can't protect themselves. Then there is our emotional selves. We get a picture of ourselves and what we are going to be, and we try to moralize over that picture. Now, in helping someone to achieve these ends of maintaining himself physically, psychologically, emotionally, so that he can project the kind of image that he wishes of himself, there are certain kinds of services that have to be brought to people who then can go on their way. For example, you can give some people $10 a day to come to school, and they will come to school for the $10 and that's it. They will behave themselves but they won't learn a thing. That can be support services, in the context that it will be productive. The kid won't come to school if he can't dress properly, if he is ashamed of the way he is dressed. That kind of support has to be given to him. He may eat in the cafeteria where he sees others' table manners that he doesn't have. Maybe he will be afraid to attend a company dinner because he will be afraid he will not know what to do. Here is another kind of support service. There is a whole area of services that have to be brought. Maybe a child might want to become involved in a program, and maybe he can't read, and in that program you have to read certain materials. Again, that supportive service of remediation has to be brought in.

Now the idea is not to simply deal with things as they happen. This is not an organized educational system. This doesn't give assurance that everything will be dealt with as it should be. There must be some organization so that somebody can help who recognizes the needs of an individual—who can go someplace, to a person, to a chart, to an

agency, a phone number, and can find for this individual what he needs. If that first inquiry is not successful, that person can refer him to someone else, and ultimately the correct service will be charted for the next time so you don't have to go through that again. There is a structure and a function for bringing these services to people. You can perform a significant service. If you don't know yourself, at least you know where to send them to someone who can help them, especially that child who smells so bad nobody wants to come near him. You can send him someplace where he will get counseling on habits that will permit him to sit in on the program. Somebody has to know where these services are available. The only way you can do it, much as I hate to say it, is through a bureaucratic effort in an agency who has this function, and it seems to me this is what we want to develop. When you develop a structure, you must know function, and you have to know what services are to be made available.

COMMENT: What he means is that there should be one service.

COMMENT: All of these services are of a general nature. I am putting administration in parenthesis because this is what Dr. Hamburger said. It makes good sense to me to separate administrative from personal. The administrative end of it has to take care of the personal needs. The personal has to be subsumed under the administrative. The personal grooming habits of those sent to the agency for help would be assumed by the administrative with a substructure called personal.

COMMENTS FROM AUDIENCE: Discussion regarding the fact that supportive services may be administrative but there are needs for counseling to help individuals. Some felt they had not progressed very far in resolving the issue. The Moderator asks how many people in the audience are administrative and finds that a large number are counselors or act in that capacity mostly for students in vocational education. They feel they need some implementation to take back to their schools. They begin to construct the list.

MODERATOR: We have decided that supportive services are first of all administrative. They include health, social proprietal (we decided this included good grooming, manners, and other disciplines involved in a course in the school). Some other agency could also give this aid. Transportation is three, recreation is four, restructuring and development is five, quick drug attention is six, financial support for economic reasons is seven, and eight is community relations. Nine is guidance and counseling, ten is library, museum and filtering service; eleven is industrial and business services; twelve is community and parental services; thirteen is guardian-maker; fourteen is remediation, fifteen is job counseling; and sixteen is job development.

MODERATOR: Vocational education people have the responsibility for seeing that all of these services get together. It is important to know that no area of the school stands alone. The student is not alone. All of the supportive services will be available to him in the community where they are needed. We must evaluate where we are at the present time and where we want to go before we find out how we are going to get there. It is possible for a number of agencies to work together at a central location in a combined effort in order to perform these services.

Summary by Dr. Hamburger

The kind of services and the way of setting them up will depend upon the locality of the school. My friend from Mississippi might have a rural situation for services, someone else might have an urban area which is not too large, another person might be from an area where you have a tremendously large school with 25,000 children. These kids have needs beyond a school lunch program and we think you can get them into an area within a radius of two or three school buildings so that supportive services are readily available to them. They will need welfare services, food, transportation, and other things that fall in the welfare area. They will need health services, the kind of reasonable services, not like sending a teacher home for two weeks because she has touched a sick child. We have character-building and recreation, scouting programs; for the scounting programs we have salaried people and these salaried people provide certain services; we have rehabilitation people, we have safety and computer program; policemen, teachers, we have security guards in the building. Now we come into the school facility itself. What supportive services lurk in that building? That depends on the location, what personnel there is, and what type of school it is. Does a school counselor become part of these school support services or is the school counselor for academic studies only, part of the ongoing institution? The counselor usually has the support role as the teacher does. This should be defined. I might use the coach as a counselor. We have found that the coach has sent more kids to college than anybody else in the school program. Speaking of job placement, the shop teacher places more students than anyone else. We find that the teacher who teaches health is coordinating the hospital services, and she does a lot of doctoring and she gets a lot of help.

Vocational education has come a long way. Generally, I think that one of the special advantages is that we are teaching in a special setting, and what we are teaching is meaningful. Like most educators, we keep falling back into the old trap of protecting institutions, of protecting classes, of worrying about schools and about the support services of the school, and not focusing our attention on job building, which is to teach a student a skill in meaningful terms, to prepare him for life, to fully utilize all services to meet the child's needs, and to discover how that child's needs can best be met. What the support program is and what we give him from that program to succeed is our job. To make his task in school more meaningful is our job. What are the things that inhibit his learning that might have been dealt with if these support services had been available along the line, at the obvious stage, at the educational planning stage, at the institutional stage, referral to job placement, jobs in higher education. What, then, do we need to support the child, not to support the school, classroom, and teacher.

We must look at the child and try to teach him in meaningful terms and meet his needs, try to identify in meaningful terms what the child is after, and how we are going to serve him. We can't even *look* at the political system. If we know where we are going, we can find a way to get there.

PARTICIPANT REACTION SESSION, STUDENT SERVICES

Dr. Campbell, presiding

Dr. Campbell introduced Kenneth Allen, Senior Developmental Advisor; Robert Wigglesworth, a graduating senior; Robert Williams, Director of Placement and Career Development for WTI; Denise Foster, Public Services Administration student; and William Penn, Senior Developmental Advisor in Public Administration and Services Program. These statements were in answer to questions from the conference audience.

Miss Foster:

I am a Washingtonian, and a Roosevelt High School graduate. Upon coming to Washington Tech I sort of wanted to pursue a computer program but that was simply for the money. Thanks to the counselors, I realized that I fit better in social welfare and that is where I am. I guess I aspire to be a counselor. I think WTI has more to offer than most schools in the area. I have really enjoyed my stay here, though I have been at Tech only one year. I am a transfer from Howard University.

If I had a choice between a loan or a grant, I would take the grant, but I would rather work if I could get the type of employment I want. I read about WTI in the paper, but I really got my information from my friends.

First of all, anybody who has gone to inner city schools, in D. C., is utterly lacking in certain areas. And I guess the major area I was lacking in was math. And then, when you go to Howard you become a number. Howard isn't very relevant to the average black person, especially those from the D. C. area. Most of their students come from a lot of other places, and they can relate. But if you have been in a poor school system and you are going into something that is run like a black "Harvard" then you can't make it there. I did not think I could identify with Howard. I got bored because of all of the required courses. I just could not see the need for some of them although now I see that they would be necessary. But then it seemed like a waste of time. When I was a senior in high school I knew what I wanted to do. I wanted to be a social worker. All my major was sociology. And that still is an interest of mine. But it seemed like it was going to take me forever and a day to take a course in sociology, like I was there for three semesters, and I was taking required courses, and anything I had had close to it was social science which was not related to the field that I wanted to get into, so I just got disgusted. If someone had recommended to me my senior year in high school that I go to Washington Tech I would have gone.

Mr. Wigglesworth:

I was graduated from an inner city high school in 1966 and attended college for about a year. While at college I was pursuing a bachelor's degree in science. When I was in high school I thought I was a real good scientist but soon I found out it was different in college. I finally dropped out because I had to do a lot of deep thinking. I worried about grades, and I thought I would drop out of college because it was just too structured. I attended post-graduate school and took drafting, engineering drafting technology. I knew earlier that I was mechanically inclined. I could sit down and think, but I had to use my hands. I was sort of stagnant. I decided to transfer to WTI. I had a full-time job at night and it was killing me.

Now I am in the electrical mechanical technology area. I have more individual attention than I did at the larger college. Here, I don't have to have an appointment to see a counselor, I just go to any one of them. If I need help I ask for it and any of them will help me.

I am now in the process of finding a summer job. I am in sort of an awkward position and I would like to continue my education this summer. I would like a work-study job. This is my second year. My field is electrical mechanical technology with military application of it. I like to be classified as an electrical mechanical engineer rather than as an engineer, because he is electrical-mechanically oriented and he knows electronics and he is brought into all three of the areas, and is more flexible in the areas. It would encompass anything centered mainly around machines, from computers on down.

I would like to set my sights a little higher than TV repair. Last year I wanted to do a lot of designing on my own but my instructors explained to me that I had to go on to school. I understood, so I had to be resigned to my own particular fancies, and do it on my own with the help of my instructors here and also the counselor. But the majority of the students will be going out to jobs.

I figure that there are a lot of students on the high school level who in general tend to pick a profession that means money. Just arbitrarily. Just following the Jones. I knew that I would be in some type of scientific field. I was telling Mr. Allen about last year—even in school, it has been a challenge to me. I just found myself reaching a pinnacle and hanging there. So I have to just stick with it until I am an engineer. When I was in high school I just wanted to "do things." I didn't know what I wanted to do.

I think radio and TV are good areas. But I think students would like to work toward design and prepare. Radio and TV people make a lot of money. But if we go there for employment we are regarded as vocational, well, poverty. They think we are part of President Johnson's poverty program. We are something that President Johnson thought up. If you associate this with radio and TV people, it's like taking a course at a commercial school, with no practical training in radio and TV at all. We have plenty of people downstairs in radio and TV who have been in there for about ten to twenty years and they know the practical work upside down, backwards, all around, but if you ask them a question about a vacuum tube, they can't tell you. We are working here to design as well as prepare.

Vocational High Schools Seem Second-best

I guess I was in junior high school when I was deciding between a vocational school and academic-oriented school. I attended Patterson Junior High School. I thought, "I'm not going to a vocational high school because the school is in the intra-city, and does not have adequate equipment to work with." I knew all the fellows who were going, and I knew the type of jobs they were getting. I just thought, "I am not going there because they are banned from the union," and I knew the union made all the money. And knowing the schools were not adequately equipped, and knowing some of the teachers (and I am not saying all of the teachers were like that), most of them would have thought I was some little old boy coming up here to get a trade, and anybody who gets a trade is somebody who can't learn.

I got through high school with pretty good grades, and it was all academic, but I still did not have a trade when I got out. I thought I would go to college but I wondered if I could make it in math. All I could do was dig ditches or wash dishes. I thought of a vocational school because you do have a trade when you finish there. The Army wants people with trades, rather than academic people unless you do exceptionally on exams. But essentially when I came into high school i had a bad view of vocational schools because of their inadequate equipment—everything about it was unattractive to me. I wanted to go to college, but I couldn't see college in view, so I went to vocational high school.

I don't consider it a loss. During that time, I sort of got myself together. But, in effect, because of my age, some people just want you to rush out and go to work. I have learned that you have to just take your time. But I don't think it is a loss. Some of the courses I was able to transfer here and I learned quite a bit there about power structure. I just didn't like Howard.

Teachers and Counselors Too Programed

Another thing I ran across during my first year at Howard—I am not downing it but it is structured so much until it is no good. But I made arrangements. For instance, I would walk into my counselor's office and he asked me when I would graduate, and he seemed to have the same attitude, and he gave me a bunch of remedial subjects. And they were thorns in my side. We met in an auditorium and the majority of the graduates were from D.C. high schools. There were over 300 people, 75% from D. C. The majority of the graduates had remedial subjects.

While I was in the twelfth grade, this is how ill-prepared I was. I was in the academic section of English. I asked the teacher to give me some compositions, because of my brother who would be finishing. Well, I knew what he was going through, and I asked because I wanted to be prepared. The teacher was giving me vocabulary and so I just got bored with the class. I sat way in the back. She couldn't throw me out because I had passed all her examinations. I made her really angry. I walked out anytime I got ready, just to show my rebellion to her. She was messing my life up.

The math course was the same. Too obsolete. I passed all the courses with a C average, but I didn't know anything. I could not recall anything. I took a SAT examination. My grade was below average score in math and in English I also had a low score. It kind of set me against the teacher.

When I saw I was not getting the proper counseling in college, I just said, forget it. At the end of the whole school year in college, I had taken physical science and I wanted to find out why I had flunked it and the man would not even look at me. Because I was ill-prepared in English I flunked all my English courses. The teacher was supposed to have some orientation sessions. She never had them. So I flunked all my courses at Howard.

I went back to my English department head. I asked her what was the problem? I thought I was making A's and B's but I was getting no more than a D in my second semester. And I surely wanted to pass the English course. It was really frustrating, and I didn't know where I was going to come out. All I could see before me was a remedial job. The teachers wanted to argue with me about the word "colloquialism." The man wanted to give me a dictionary and make me look it up, find out what the word means. Just because I used a little bit of it in an essay I wrote. And so I didn't want to go back to school.

Mr. Allen:

We have talked in the past two days about occupational information. Here at WTI, we recognize the problem right from the outset. We have established a development orientation course right at the beginning. We make it mandatory for every student. And in that course we try to get that student to zero in on where he is coming from and who he is and where he is going. We try to provide him with enough information, career-wise, so that he can start making some decisions. In that process at Washington Tech, we are basically part of the school but we are so visible, we are in the nook and cranny where students hang out, we meet them at parties, we meet them on the street corner, and we are always talking. That is sort of the key to success if we have one. And the last part is, we try to get the student ready to leave. Dr. Campbell likes to call it liberation. Starting in engineering, we are trying to set up a course for a graduate seminar. We are bringing in some books, and we have negotiated the system to see the system for what it is. We try to hit the student with what he is going to face. Let me give you an example. We are bringing in some folks from Labor and we are going to talk about the local plumbing picture and the national plumbing picture, and where technical education is and where it is going. We are also going to bring in some people from the Civil Service Commission. We are going to lay it right on the students, saying, what is the placement office and personnel office function? This is not to satisfy the system but to be responsive to needs.

Also, we are going to bring in people from the Equal Employment Opportunities Commission to show the student how he can present a grievance or claim. Now, these things are overlooked a lot of the time in an institution. We feel that they are an integral part of the education process. We also want to deal with interview techniques, how you take an interview, how you can present yourself favorably. Mr. Williams calls it "packaging yourself." I call it salesmanship, sometimes a little bit of a game. But we are laying the truth on the student and we are not really ganging up on him. I can't overemphasize how much we really bug him. We are in and out of classes, we are in and out of hang-out areas, and we want to talk. We are trying to reflect need and help the student, and also give the administration, of which I am a part, some ideas of how they can assist some of these students.

SUMMARY OF EVALUATIONS AS COMPLETED BY THE CONFERENCE PARTICIPANTS

IMMEDIATE POST-CONFERENCE EVALUATION
INSTITUTE IV

Washington Technical Institute
Washington, D.C.

How did the participants react to the conference? The questionnaires tell the story. There were two parts to the questionnaires. Part One was multiple choice and consisted of 30 questions which had five possible answers. Participants were asked to circle one answer which most closely indicated how they felt. Part Two was short answer. Participants were asked to write brief statements about their feelings and reactions.

A number of the statements in Part One were written in the negative. Staff felt a more accurate and easily understood picture would be presented if in the evaluation such statements were made positive. For example, item two as listed in the questionnaire reads, "The objectives of this Institute were not realistic." Over 80% either disagreed or strongly disagreed. Thus, in the report below item two has been presented as, "Over 80% felt that the objectives of the institute were realistic."

PART ONE:

1. Over 75% felt the objectives of the institute were clear to them.
2. Over 80% felt the objectives of the institute were realistic.
3. Over 57% felt the specific objectives made it easy to work efficiently.
4. Over 65% felt the participants accepted the objectives of this institute.
5. Over 63% felt the objectives of this institute were the same as their objectives.
6. Over 98% felt they learned something new.
7. Over 50% felt the material presented was valuable to them.
8. Over 98% felt they could not have experienced as much by reading a book.
9. Over 70% felt possible solutions to their problems were considered.
10. Over 88% felt the information presented was not too elementary.
11. Over 92% felt the speakers really knew their subjects.
12. Over 52% felt the discussion leaders were well prepared.
13. Over 98% felt they were stimulated to think about the topics presented.
14. Over 98% felt they made helpful new professional associations.
15. Over 98% felt they worked well together as a group.
16. Over 70% felt they did relate theory to practice.
17. Over 82% felt the sessions followed a logical pattern.
18. Over 98% felt the schedule was flexible.
19. Over 60% felt the group discussions were excellent.
20. Over 66% felt there was time for informal dialogue.
21. Over 98% felt they had an opportunity to express their ideas.
22. Over 88% felt they were a part of this group.
23. Over 92% felt their time was well spent.
24. Over 72% felt the institute met their expectations.
25. Over 72% felt the reference materials provided were very helpful.
26. Over 78% felt little time was devoted to trivial matters.
27. Over 98% felt the information presented was not too advanced.
28. Over 80% felt the content presented was applicable to the important problems in this area.
29. Over 98% felt institutes such as this should be offered again in the future.
30. Over 99% felt institutes such as this will contribute greatly to stimulating interest in improving vocational education in the metropolitan areas.

PART TWO:

Question 31: What plans have you formulated for action?

There were 53 questionnaires completed. Six persons did not answer question 31. Of the 47 who did, many indicated that they would do similar things. From their statements it was possible to construct a list of 25 different and specific plans for action.

17 indicated they would, "Begin dialogue between academic and vocational staff."
13 noted they would, "Orient counselors and guidance personnel."
8 said they would, "Organize support services."

7 said they would, "Evaluate student needs and the admissions policy, some said they would do so using the systems approach."
7 also indicated they would, "Implement a career development program."
Other plans for action ranged from "Develop a directory of local supportive services," to "present an outline of the conference to other administrators and agency personnel at home."
A complete listing of the 25 plans can be found in Appendix A. A listing of possible plans for action formulated during the brainstorming session held during the conference is listed in Appendix B.

Question 32: Part A. Have you decided to seek additional means of exchanging information?

36 of the 53 persons completing the questionnaire answered "yes" to part A of question 31. 17 either answered "no" or left the answer space blank.
Eight distinct ways of gaining information were listed. They included:

Phone calls or personal letters to speakers (7)
Use of list of names of program participants (7)
Requesting specific information from either speakers or participants (7)
Requesting copies of all reports (5)
Use Washington Technical Institute as a clearinghouse with publication of a semi-annual newsletter (5)
Visiting other programs (3)
Requesting help in setting up programs (3)
Securing Washington AMIDS (Area Manpower Institutes for Development of Staff) for inservice training (2)

Part B. What types of information would be helpful to your work?

The following 12 items of information were listed as being helpful:

Supportive services
On-the-job training
Follow-up placements
Sheltered workshops
Oklahoma State University program
District of Columbia Public School's Career Development Program
Petersburg, Florida program
Child care centers
Behavioral objectives
"Know how" in program operating
Job banks
Vocational training programs

Question 33: What were the major strengths of this institute?

50 of the 53 participants completing the questionnaire listed a total of 17 facets of the program they felt were strong. Many listed more than one strength. A listing in order of frequency mentioned follows:

27 mentioned the speakers, either as a group or by name
17 mentioned meeting knowledgeable participants from different disciplines
12 mentioned the planning and organization
9 mentioned the relevancy of materials
7 mentioned the conference leader's helpfulness
7 mentioned the exchange of ideas
5 mentioned informality
5 mentioned the small group discussions and therefore the chance to participate
5 mentioned the sincerity and honesty
4 mentioned the opportunity to design supportive services models
3 mentioned suggestions for new programs
3 mentioned seeing Washington Technical Institute
3 mentioned flexibility
3 mentioned clear objectives
2 mentioned social activities
2 mentioned research on materials presented
1 mentioned familiarity with the Washington AMIDS

Question 34: What were the major weaknesses of this institute?

8 felt objectives were not specific enough
2 felt lack of preparation for small groups
9 felt lack of direction for small groups

1 felt speakers did not address topics
2 felt not enough time to visit existing programs
2 felt the institute did not meet its objectives
9 felt there was failure to provide definite specific solutions and actions on the problems
2 mentioned poor air from smoking
1 mentioned more effective use of audio-visual
2 felt there was promotion of personal interests
5 felt there should have been more representatives of supportive services
3 mentioned the short notification
4 felt the conference was too long
4 felt the conference was too short
5 felt an early clear definition of supportive services was needed
6 felt the housing and feeding facilities were inadequate or too far from the meeting place

There were ten other thoughts, each of which was presented only once.

SIX MONTHS' EVALUATION
INSTITUTE IV
Washington Technical Institute
Washington, D.C.

Please indicate with a check (√) in the appropriate space what action you may have taken or plan to take in the areas listed below, as a direct or indirect result of your participation in this institute.

	Action Underway	Action Attempted	Action Planned	Not Appropriate
Identified present supportive programs available to vocational education students in your area.	22	11	2	1
Analyzed capability and effectiveness of existing programs.	15	13	6	1
Conducted further investigation of possible student services requirements on local level.	14	8	3	2
Set up evaluation procedure of present institutional policy regarding real student needs.	11	6	10	7
Contacted service agencies to set up dialogue concerning ways to implement present or needed supportive programs.	19	8	5	1
Developed a directory of local supportive services.	8	5	9	10
Visited other pertinent programs.	17	10	7	2
Presented the Institute outline to other administrators and personnel of your agency.	15	13	1	4
Conducted meetings or conferences to discuss and disseminate information and ideas gained at the Institute.	16	11	3	4
Made further contact with Institute participants, instructors, or consultants.	5	6	6	12
Reported Institute concepts and outcomes informally to colleagues.	23	11	1	1
Exchanged materials with other participants from the Institute.	9	10	4	12
Involved students in planning ways to make the system more responsive to student need for supportive programs.	11	10	8	6
Initiated dialogue of understanding between academic and vocational staff.	21	6	1	8
Initiated inservice program of training for personnel concerned with supportive programs.	14	5	8	9
Implemented a career development program.	17	7	7	5
Effected change in your locality, district, or state reflecting concepts gained at this Institute.	6	13	6	7
TOTAL	243	153	87	92

1. *What did attendance at the Institute help you to do, in part, in recent activities?*
   - Develop an awareness of need for supportive services. Develop idea for plans to further evaluate supportive services and basic needs.
   - Develop an open-ended cluster type project with more emphasis on individual needs of trainees.
   - Better understand the range of supportive services available.
   - Identify supportive programs and effective coordinators.
   - Increase coordination between instructional staff and supportive persons.
   - Plan long-range programs and short term programs for under achievers.
   - Strengthen the desire to involve a greater spread of supportive activities in the total program of vocational education.
   - Establish a very positive concept of responsibility to student services and a positive approach in presenting values of vocational education to other agencies.
   - Made possible breadth of knowledge required to establish one program and propose another.

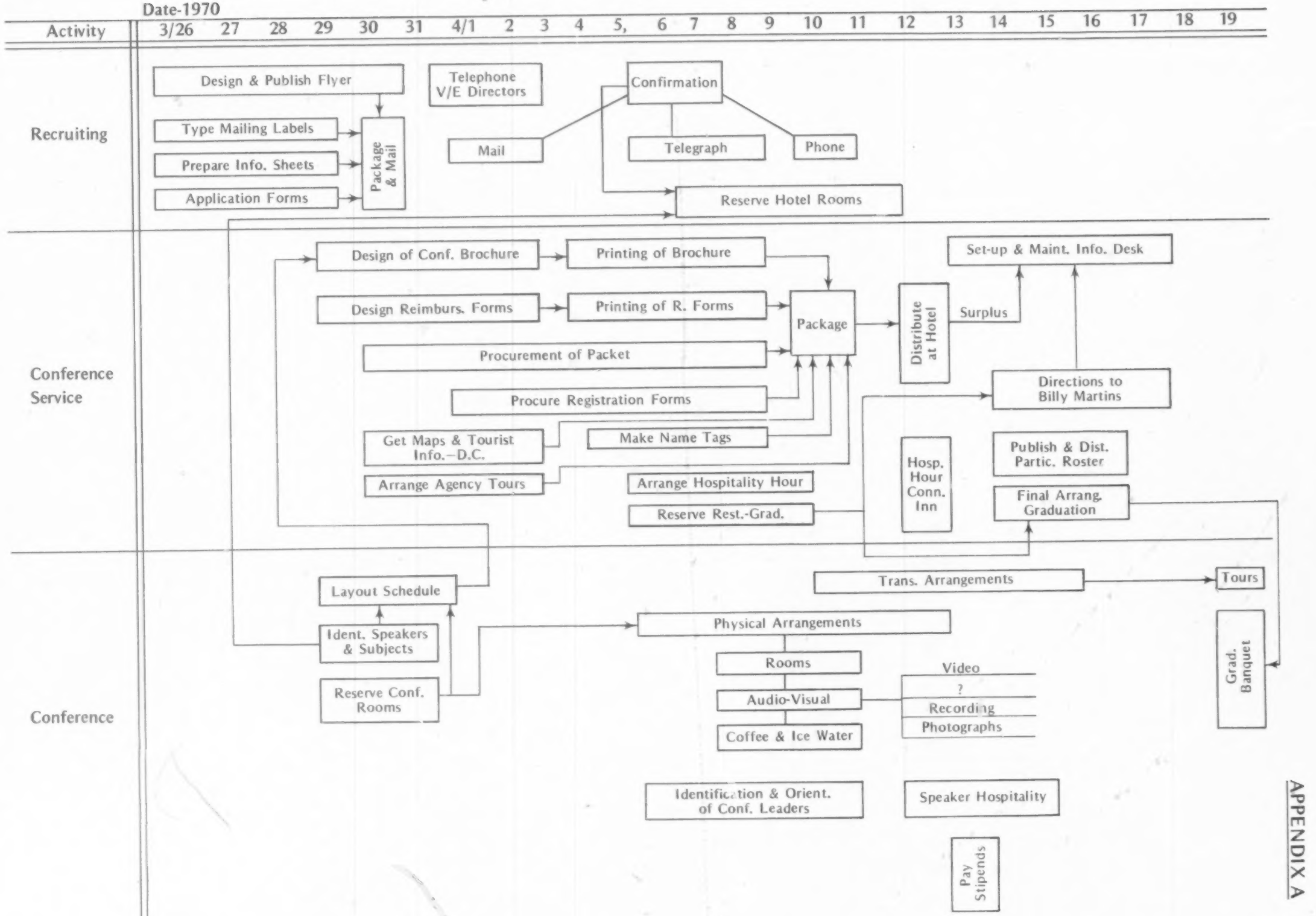
2. *What might you plan to do next year?*
   - Expand program for the disadvantaged; establish programs to meet special needs.
   - Meet more frequently with agencies which can provide supportive services.
   - Provide supportive services needed by educationally and economically disadvantaged students.
   - Attempt to provide in-service workshop for teachers, following the format of the Institute.
   - Coordinate efforts toward the Career Development concept with regard to supportive instructional services.
   - Provide for in-service session with guidance counselors and faculty concerning effective use of existing supportive agencies.
   - Study effectiveness of supportive services in post-secondary education.
   - Continue to evaluate program and make recommendations for improved services to students.

3. *What have you done in the last six months that you might not have done had you not attended the Institute?*
   - Given more considerations to individual needs of trainees.
   - Contacted other institutions—in-service training of instructors and other personnel to better use of supportive services.
   - Informed staff and co-workers of extent of supportive service agencies and encourage the use of them.
   - Included a unit of supportive services.
   - Used information gleaned from Institute to make programs for disadvantaged more relevant.
   - Would not have conducted a Summer Enrichment program for mentally retarded and other disadvantaged children. We received much encouragement from state agencies.
   - Attempted to get more clearly delineated the specific supportive instructional needs of students involved in vocational programs.
   - Provided broader services to trainees and involved community resources in training programs.
   - Re-evaluated the program.

4. *Other comments or suggestions you might care to make.*
   - Follow-up conference needed on subject to gain additional knowledge in a workable area of training.
   - More such conferences; useful and needed.
   - Excellent conference.
   - Stronger representation of non-school agencies would enhance the effectiveness of a future conference.
   - Need for Institute that involves academically and vocational oriented individuals.
   - Need for more opportunities for vocational educators to articulate with other educators, particularly supportive personnel.
   - Need exposure to other programs and more workshops that have cross-section of country involved.
   - Useful experience.

SUPPLEMENTAL MATERIAL

INSTITUTE IV–WTI PLANNING CHART



Conference Agenda

SUNDAY
April 12

Hospitality Hour
8:00 P.M.

MONDAY
April 13

Orientation
9:00 A.M.

Overview
Cleveland
Dennard

Analyzing Community Needs
Marvin Feldman
10:45 A.M.

Admissions/ Outreach
Horace Holmes
1:30 P.M.

Planning Techniques
Robert McKee

Participant Reaction
3:15 P.M.

TUESDAY
April 14

Establishing Educational Objectives
Kenneth Hoyt
9:00 A.M.

Participant Reaction
10:45 A.M.

Relationships of All Institutional Student Services
Martin Hamburger
1:30 P.M.

Participant Reaction
3:15 P.M.

Daily coffee break

10:15-10:45 A.M.

2:45-3:15 P.M.

Lunch

12:00-1:30 P.M.

WEDNESDAY
April 15

Innovations and Old Notions
Theodore Cote
9:00 A.M.

Information Systems
Cleveland
Dennard
10:45 A.M.

Supportive Services
WTI
Anthony Campbell
1:30 P.M.

Participant Reaction
3:15 P.M.

THURSDAY
April 16

Referral System
Lucille Johnson
9:00 A.M.

Job Bank
Maurice Hill
10:45 A.M.

Followup
Mary Ellis
1:30 P.M.

Participant Reaction
3:15 P.M.

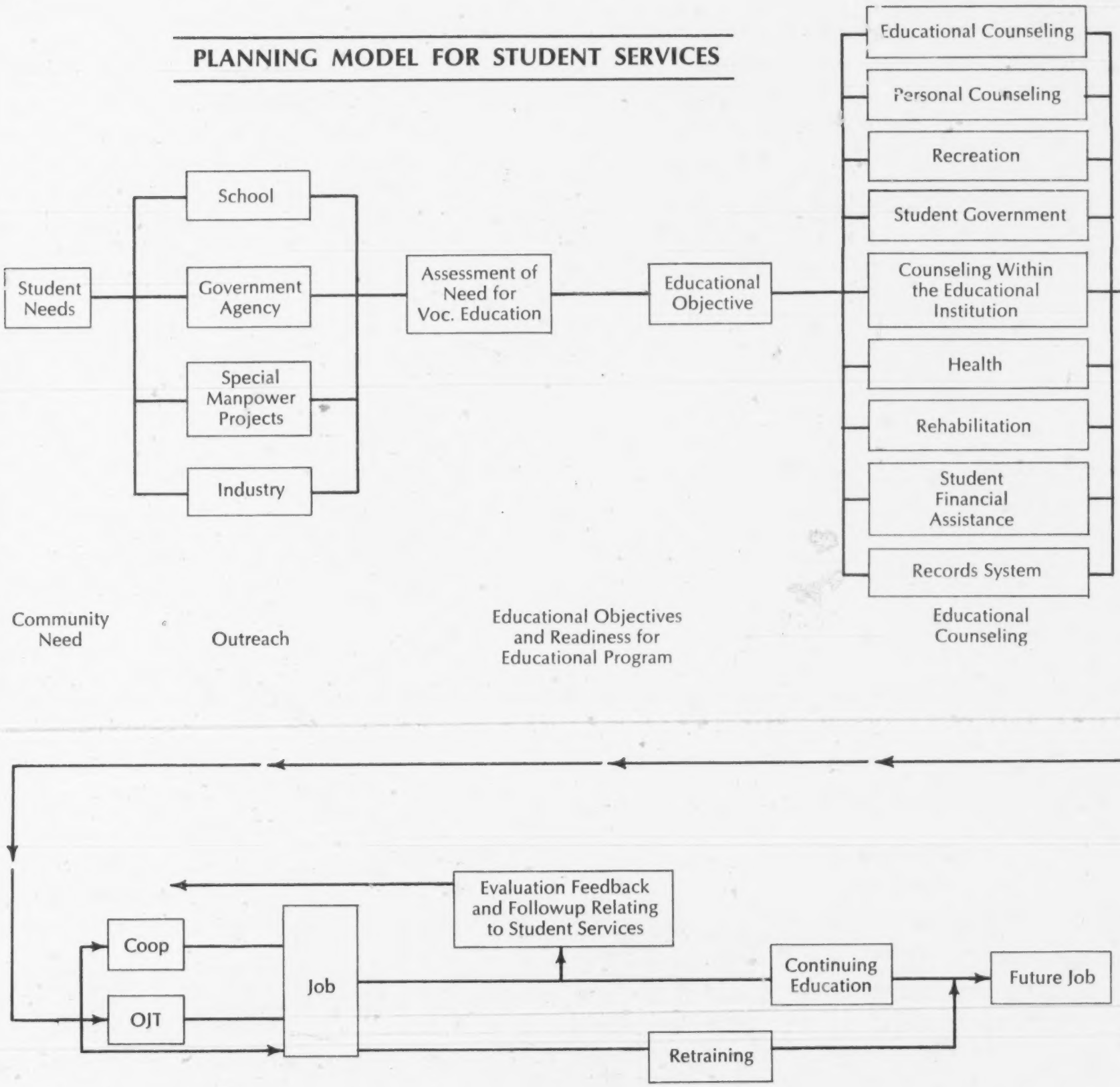
Conference Banquet
James Jones
6:30 P.M.

FRIDAY
April 17

Agency Visits
Conference Reporting
9:00 A.M.

APPENDIX C

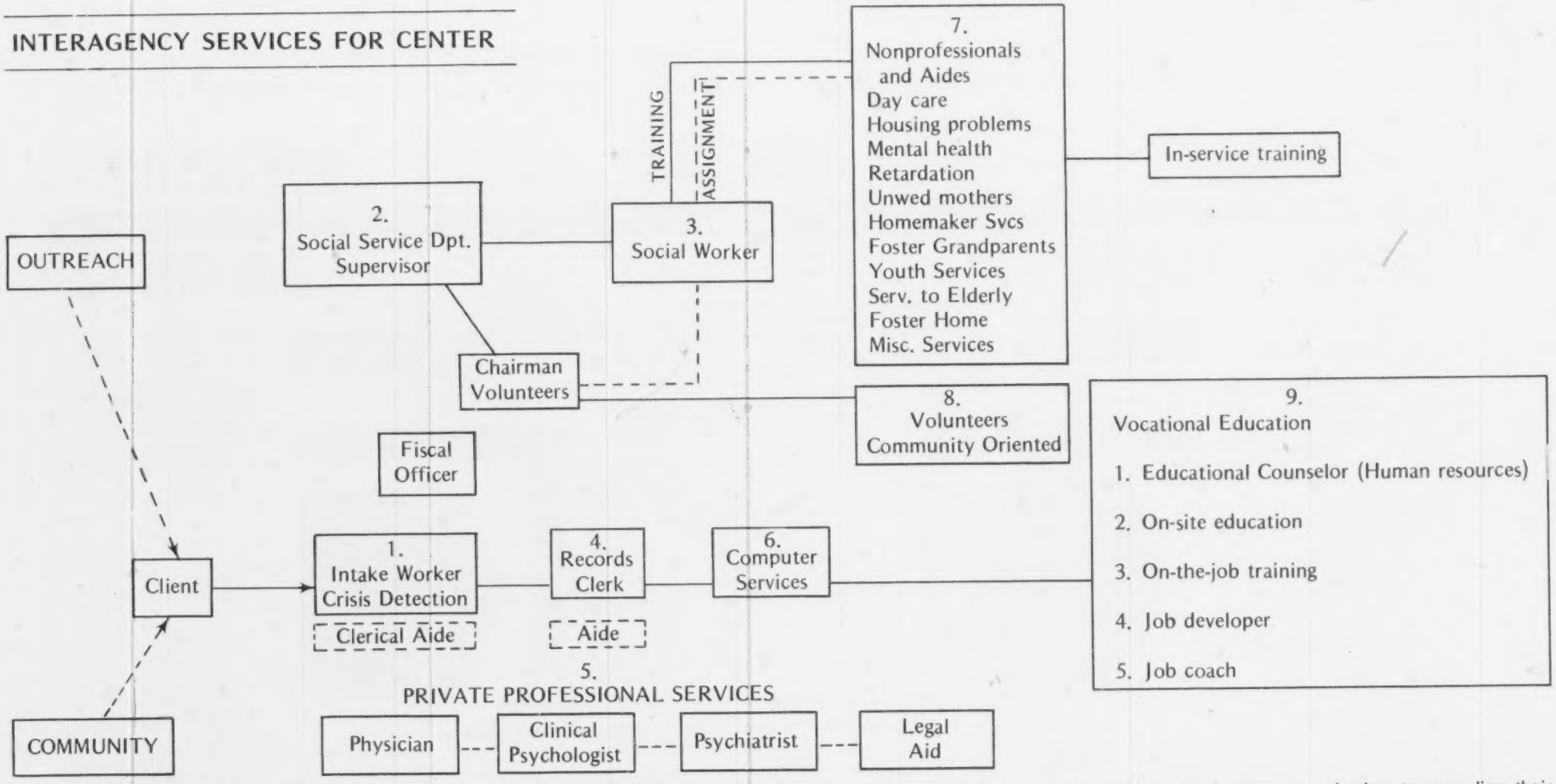
PLANNING MODEL FOR STUDENT SERVICES



Community Need | Outreach | Educational Objectives and Readiness for Educational Program | Educational Counseling

Referral | Employment | Future Employment

INTERAGENCY SERVICES FOR CENTER



1. INTAKE WORKER. Social worker who functions under general supervision of Social Service Dept. Supervisor. Serves as crisis detection; screens prior to job counselor referral; sorts and routes. Trains clerical aide from voc ed program to keep records, assist in receiving clients.

2. SOCIAL SERVICE DEPT. SUPV. M.S.W. with 2 years' experience. Coordinates all work flow, is responsible for setting up training sessions for nonprofessional supportive services aides, both paid and volunteer; maintains liaison with voc ed counselors and human resources counselors. Screens students to be fed back into aide program. Maintains contact with Professional Services. Supervises chairman of volunteers.

3. SOCIAL WORKER. Functions within the institution, liaison with and reporting to Soc. Svc. Supv., works with Intake Worker and specialized services aides, functions outside of the institution as visiting social worker. Coordinates and makes available other types of supportive services to client such as homemaker services, housing aid, legal aid, mental health and retardation referral, day care, youth services, etc.

4. RECORDS CLERK. Responsible for verifying first client records, cross reference with family file, compile all pertinent data to be given to computer programmer. Trains aide from voc ed program if needed for overflow.

5. PROFESSIONAL SERVICES. Physician—routine physicals, emergency, referral. Clinical Psychologist—all testing, achievement, I.Q., aptitude to include vocational aptitude, personality adjustment; Psychiatrist—for severe need. Provide professionals with centralized office space with agreement that in return for space they will give their services, or let them collect their own fees and have private patients. Also can function under Medicare, Medicaid, Family Assistance Plan. Legal aid service can be provided by a young professional in the group with professional services, or can be provided by the community agency. This would include a service for bail bond.

6. COMPUTER SERVICES. This service, either in-house or time bought should be coordinated by programmer for storage, retrieval, and several different types of printout. (Research, funding proof, incorrect referral, as well as reporting and routine information.)

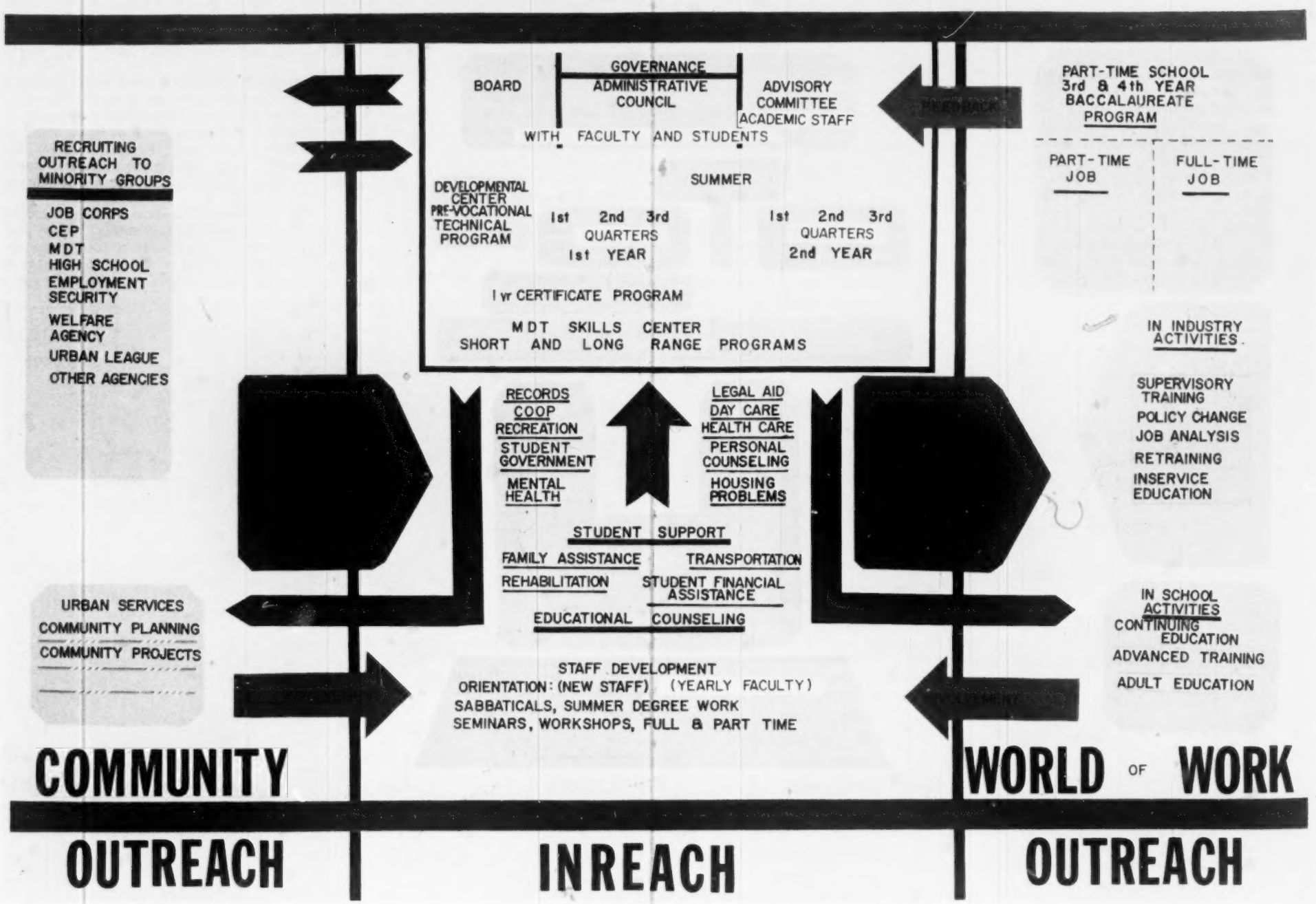
7. NONPROFESSIONALS. Should work closely with professionals in each of the areas, and be trained by them. Insofar as possible, these people should be hired from the ranks of job seekers out of the vocational education system, as well as from the families of those students who come from disadvantaged homes. Not only is the income needed, but the opportunity to receive training to make them useful citizens in their community is a great motivation to upgrading their standard of living and aspiration. These nonprofessionals should be carefully trained and should meet periodically with staff for review of program services. They can often suggest better means of service because of their experience with distress. Inservice training should be a part of their regular workload. Their services as aides can extend to: day care, housing problems, mental health, retardation, transportation, unwed mothers, homemaker services, foster grandparents, youth services, services to the elderly, etc.

8. (a) VOLUNTEERS. Trained by social service department supervisor and chairman of volunteers. Community action heads will train your volunteers with theirs (human resources).

(b) VOLUNTEERS, COMMUNITY ORIENTED. These people are assigned to various duties through the center, and receive careful training from the professional person in charge of their service. They are resource persons for need, and also maintain community relations as well as being an information system for the community in terms of center capability, public relations, and the advantages of an educational system with peripheral supportive services.

9. VOCATIONAL EDUCATION COMPLEX. Education counselor (human resources); On-site education; On-the-job training; Job developer; Job coach.

URBAN EDUCATION CENTER MODEL



This model was developed by Washington Technical Institute Staff and goes beyond the Student Services Conference. However, we are including it in the report because it relates to conference discussions.

PARTICIPANTS

Conference on Coordination of Supportive Programs for Vocational Education Students in Metropolitan Areas

Adams, J. Calvin	Deputy Director of WCEP United Planning Organization	Washington, D.C.
Aldrich, John D.	Vocational-Technical Coordinator School Department	Newport, Rhode Island
Allen, Kenneth M.	Washington Technical Institute	Washington, D.C.
Anderson, Donald R.	Vocational Education Coordinator Badger High School	Lake Geneva, Wisconsin
Anderson, Roedean S.	Howard University	Washington, D.C.
Baughm, Lloyd E.	Executive Director Business Education	Atlanta, Georgia
Bland, June (Mrs.)	Research Assistant Public Schools	Washington, D.C.
Bunch, John M.	Coordinator, Business Education Meddenburg School System	Charlotte, North Carolina
Burkeen, O. Leonard	Area Manager Department of Economic Security	Louisville, Kentucky
Calvin, Lee	Washington Technical Institute	Washington, D.C.
Colon, Luis V.	Regional Director Department of Education	Hato Rey, Puerto Rico
Constantine, Joseph W.		Hartford, Connecticut
Cooke, Edward	Assistant Superintendent Richmond Public Schools	Richmond, Virginia
Davidson, Edmonia	Chairman Adult Education Howard University	Washington, D.C.
Des Roches, D. L.	Washington Technical Institute	Washington, D.C.
Devonald, William M.	Vocational Education Temple University	Philadelphia, Pennsylvania
Diaz, Robert	United Migrant Opportunity Services	Milwaukee, Wisconsin
Duckett, Martha H.	State Supervisor Vocational Education Department	Boston, Massachusetts
Duffy, Robert S.	Dean, Occupational Education Grand Rapids Junior College	Grand Rapids, Michigan
Duwe, Henry E.	Director, MDT Center Board of Education	Buffalo, New York
Emery, Earl	Coordinator, Out of School Youth and Adult Business Education	Flint, Michigan
Fatersik, John R.	Assistant Principal, Industrial Arts Boston School Department	Boston, Massachusetts
Ferrell, Bernice	Washington Technical Institute	Washington, D.C.
Fishken, Allen H.	Coordinator, Occupational Skills Board of Education	New York, New York
Flowers, Charles E.	Director, Adult and Continuing Education, Board of Education	Plainfield, New Jersey
Ford, Andrew F.	Director, Technical and Industrial Division, Washtenaw Community College	Ann Arbor, Michigan
Fortin, John E.	Coordinator, Vocational Technical Teacher Education, Murray State U.	Murray, Kentucky

Fredericks, Edgar	Chairman, Division of Public Svc. Northern Virginia Community College	Annandale, Virginia
Gearhart, James L.	Director, Occupational Education Board of Education	New Hanover County Wilmington, North Carolina
Gilliam, Virginia R.	Home Economics Supervisor School Board	Norfolk, Virginia
Gipson, Trent	Director Adult Education	Indianapolis, Indiana
Gordon, George J.	Associate in Industrial Education State Education Department	Albany, New York
Gregg, Robert W.	Coordinator, Distributive Education, Board of Education	Birmingham, Alabama
Heiderman, Walter H.	Staff Specialist, MDT, Maryland State Department of Education	Baltimore, Maryland
Helm, J. Thomas	Assistant Director, Department of History, Public Schools	Washington, D.C.
Hill, Nathaniel E.	Assistant Director, Division of Guidance, Public Schools	Washington, D.C.
Hobbs, Dorothy R.	Supervising Director, Division of Instruction, Public Schools	Washington, D.C.
Howard, Robert E.	Supervisor, Vocational Division Public Instruction	Indianapolis, Indiana
Hunt, Myrtle E. (Mrs.)	Supervisor, Adult Home Economics Pinellas County School Board	Clearwater, Florida
Iacono, Luigi F.	Engineering Division Chairman Northern Virginia Community College	Annandale, Virginia
Kelly, Edward J., Jr.	Director, Prince Regional Vocational Technical School	Hartford, Connecticut
Landers, Billy W.	Supervisor Federal Projects	Memphis, Tennessee
Lawrence, Frank B.	Acting Assistant Superintendent Vocational Education, Public Schools	Washington, D.C.
Lee, Jasper S.	Assistant Professor of Agricultural Education, Mississippi State Univ.	State College, Mississippi
Lewis, Shirley M.	Supervisory Nurse for Public Schools	Washington, D.C.
Mannier, Raymond G.	Assistant Principal Patterson Cooperative High School	Dayton, Ohio
Marburger, Morris J.	Trade and Industrial Coordinator Board of Education	Canton, Ohio
Marshall, Ernest T.	Director, Equal Employment Opportunities, Board of Education	Detroit, Michigan
Mears, Sherman R.	Administrative Assistant Director of Vocational Education	Utica, New York
Medina, Genevieve (Mrs.)	United Migrant Opportunity Services	Milwaukee, Wisconsin
Melmed, Elaine C.	Program Coordinator, Metropolitan Educational Council	Washington, D.C.
Moreland, John Y.	Area Superintendent Board of Education	Atlanta, Georgia
Morrison, S. Richard	Washington Technical Institute	Washington, D.C.
Nash, Michael	Assistant Director Project BUILD	Washington, D.C.

Norton, Lucile	Counselor, Acting Assistant Director Opportunities Industrial Center	Washington, D.C.
Overstreet, Warren H.	Principal, Richmond Trades Training Center	Richmond, Virginia
Penn, William T.	Washington Technical Institute	Washington, D.C.
Rannigan, Eugene P.	Supervisor, Trade and Industrial Education, Public Schools	Canton, Ohio
Saunders, William	Project BUILD	Washington, D.C.
Seltzer, James	Instructional Specialist Business Education	Flint, Michigan
Simons, William H.	President Teachers' Union	Washington, D.C.
Smith, John H.	Assistant Coordinator Muscogee County School District	Columbus, Georgia
Snyder, Paul C.	Director of Vocational Adult Education	Dayton, Ohio
Stilson, James E.	Director of Social Work Allen County Nursing Home	Fort Wayne, Indiana
Susco, William J.	Vocational Director Intern Hamilton County Vocational School	Cincinnati, Ohio
Swanson, A. K.	Chairman, Business Sciences Northern Virginia Community College	Annandale, Virginia
Taylor, Gloria	Department of Education	Washington, D.C.
Terrell, Frank T.	Special Ass't to Executive Director Opportunities Industrial Center	Washington, D.C.
Thompson, Edwin L.	Area Superintendent, Vocational Tech. & Adult Ed., Public Schools	Atlanta, Georgia
Todd, George H.	Board of Education	Louisville, Kentucky
Volland, Robert J.	Director of Vocational Education Public Schools	Washington, D.C.
White, Otis	Vocational Technical and Adult Education, Public Schools	Atlanta, Georgia
Whitten, Benjamin	Area Superintendent for Vocational Education, Public Schools	Baltimore, Maryland
Williams, Furman F.	Technical Training Analyst Wash. Inst. for Employment Training	Washington, D.C.
Willis, Jack E.	Ass't Director, Adult Educ. Center Director, MDT Skill Center	Memphis, Tennessee
Wilson, Hess G.	Dir., Instructional Svcs., New Castle-Gunning Bedford School Dist.	New Castle, Delaware
Witka, Frank J.	Area Coordinator, Disadvantaged & Handicapped, Normandy High School	Parma, Ohio
Woodward, A. James	Project BUILD	Washington, D.C.
Wotowiec, Peter	Assistant Supervisor Vocational Horticulture	Cleveland, Ohio

APPENDIX G

PERT BIBLIOGRAPHY

Cook, Desmond L. *Program Evaluation and Review Technique. Applications in Education.* Cooperative Research Project OE 12024, Monograph 17. U.S. Office of Education, 1966.

Dennard, Cleveland L. *A Systems Approach to Vocational Education Planning at the Local Level.* Washington, D.C.: Washington Technical Institute, 1966.

Enrick, Norbert L. *Management Planning, A Systems Approach.* New York: McGraw-Hill, Inc., 1967.

Federal Electric Corporation. *A Programmed Introduction to PERT.* New York: John Wiley, 1963.

Horowitz, Joseph. *Critical Path Scheduling, Management Control Through CPM and PERT.* New York: The Ronald Press Company, 1967.

Introduction to PERT Cost Systems for Integrated Project Management. Washington, D.C.: Department of Defense Naval Weapons, Government Printing Office, 1961.

Meckley, Richard F., Valentine, Ivan E., and McCoy, Zane. *A Guide to Systematic Planning for Vocational and Technical Education Facilities.* Columbus, Ohio: The Ohio State University, The Center for Vocational and Technical Education, 1968.

McKee, Robert L. *The Documentation of Steps to Establish a Technical College and the Evaluation of PERT as a Planning Tool for Educators.** Ann Arbor, Michigan: University Microfilms, 1966.

Morris, L. N. *Critical Path Construction and Analysis.* Oxford: Pergamon Press, Ltd., 1967.

Rice, Arthur H. "Let PERT Put You in the Driver's Seat." *Nation's Schools*, 76:28-29, August, 1965.

Shaffer, L. R., Ritter, J. B., and Meyer, W. L. *The Critical Path Method.* New York: McGraw-Hill, 1965.

Thornley, Gail, editor. *Critical Path Analysis in Practice.* London: Tavistock Publications, 1968.

*Also available through ERIC Clearinghouse, Vocational and Technical Education, Ohio State University, Columbus, Ohio 43212.

PLANNING AID

PLANALOG, a planning system available from Planalog, Inc., 833 Suburban Station Building, Philadelphia, Pennsylvania 19103.